Appendix 6.3(30). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY STROMATEIDAE BUTTERFISHES				
Peprilus alepidotus (Linnaeus) Harvestfish	Carnivore; predator on small fishes, invertebrates (Hildebrand and Schroeder 1928)	Pelagic; widespread (Gunter 1945) (Gunter 1938)	Moderately abundant during warm months; (Conner Unpubl.)	None
Peprilus burti Fowler Gulf Butterfish	Carnivore; predator on small fishes, invertebrates (Hildebrand and Schroeder 1928)	Demersal; mainly in deeper areas as adults; young widespread in nearshore area (Gunter 1945) (Gunter 1938)	Moderately abundant during warm months (Conner Unpubl.)	Minor component of industrial bottomfish catch farther offshore (Moore, Brusher and Trent 1970)
FAMILY SCORPAENIDAE SCORPIONFISHES				
Scorpaena calcarata Goode and Bean Smoothhead Scorpionfish		Demersal; mainly in deeper areas and around reefs, jetties, wrecks (Gunter 1948)	Rare; occasionally taken in trawls (Conner Unpubl.)	None
FAMILY TRICHIDAE SEAROBINS				
Prionotus martis Ginsburg Barred Searobin		Demersal; mainly in deeper areas farther offshore (Ginsburg 1950)	Rare; occasionally taken in trawls (Conner Unpubl.)	None
Prionotus rubio Jordan Blackfin Searobin		Demersal; mainly in deeper areas farther offshore (Gunter 1945) (Moore, B Brusher and Trent 1970) (Gunter 1938) (Ginsburg 1950)	Sparse; see habitat entry	Minor component of industrial bottomfish catch (Moore, Brusher and Trent 1970) farther offshore
Prionotus scitulus Jordan and Gilbert Leopard Searobin	Carnivore; primarily of crustaceans, annelids (Springer and Woodburn 1960)	Demersal; widespread (Walls 1975) (Ginsburg 1950)	Moderately abundant in shrimp trawls (Conner Unpubl.)	None
Prionotus tribulus Cuvier Bighead Searobin		Demersal; mainly in inland areas (Walls 1975) (Ginsburg 1950)	Moderately abundant in shrimp trawls except coldest months (Conner Unpubl.)	None

Continued

Appendix 6.3(30). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY BOTHIDAE LEFTEYE FLOUNDERS				
Ancylopsetta quadrocellata Gill Ocellated Flounder	Carnivore; predator on small crustaceans and fishes (Topp and Hoff 1972)	Demersal; widespread (Topp and Hoff 1972) (Gunter 1945) (Gunter 1938)	Sparse; occasionally taken in trawls (Conner Unpubl.)	None
Citharichthys macrops Dresel Spotted Whiff	Carnivore; predator on small crustaceans (Topp and Hoff 1972)	Demersal; preferring bottoms of sand (Topp and Hoff 1972) (Hildebrand 1954)	Sparse; occasionally taken in trawls (Conner Unpubl.)	None
Citharichthys spilopterus Gunther Bay Whiff		Demersal; widespread (Topp and Hoff 1972) (Hoese 1958) (Gunter 1945) (Gunter 1938)	Abundant; often taken in trawls (Conner Unpubl.)	None
Etropus crossotus Jordan and Gilbert Fringed Flounder	Carnivore; predator mainly on polychaetes and crustaceans (Topp and Hoff 1972) (Reid 1954)	Demersal; widespread, preferring bottoms of mud, detritus (Topp and Hoff 1972) (Gunter 1945) (Gunter 1938)	Moderately abundant; often taken in trawls (Conner Unpubl.)	None
Paralichthys albigutta Jordan and Gilbert Gulf Flounder	Carnivore; predator; young mainly on crustaceans, adults mainly on fishes (Topp and Hoff 1972)	Demersal; preferring sand substrates (Topp and Hoff 1972) (Hoese 1958)	Sparse; occasionally taken in trawls, by hook and line (Conner Unpubl.)	Limited value as game fish
Paralichthys lethostigma Jordan and Gilbert Southern Flounder				
Paralichthys squamilentus Jordan and Gilbert Broad Flounder		Demersal; adults in deeper offshore areas but young occasionally enter nearshore area (Walls 1975) (Hoese 1958)	Very rare (Conner Unpubl.)	None
Syacium gunteri Ginsburg Shoal Flounder		Demersal; mainly in deeper areas farther offshore (Walls 1975) (Springer and Bullis 1956)	Sparse; occasionally taken by shrimp trawls (Conner Unpubl.)	Minor component of industrial bottomfish catch farther offshore (Moore 1970)

continued

Appendix 6.3(30). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY SOLEIDAE SOLES				
Achirus lineatus (Linnaeus) Lined Sole		Demersal; widespread; (Gunter 1945) (Gunter 1938) (Hoese 1958)	Abundant; especially in warm months (Conner Unpubl.)	None
Gymnachirus Lexae Gunter Fringed Sole		Demersal; mainly in deeper offshore areas (Walls 1975) (Gunter 1938) (Dawson 1964)	Sparse; occasionally taken in trawls (Conner Unpubl.)	None
Trinectes maculatus (Bloch and Schneider) Hogchoker		Demersal; widespread (Walls 1975) (Gunter 1945) (Gunter 1938) (Hoese 1958) (Springer and Bullis 1956)	Abundant, often taken in trawls	None
FAMILY CYNOGLOSSIDAE TONGUEFISHES				
Symphurus diomedianus (Goode and Bean) Spottedfin Tonguefish	Carnivore; predator on benthic invertebrates, mainly crustaceans, polychaetes, gastropods (Topp and Hoff 1972)	Demersal; usually in deeper areas and preferring sand bottoms (Topp and Hoff 1972) (Walls 1975)	Very rare	None
Symphurus parvus Ginsburg Pygmy Tonguefish		Demersal; usually in deeper areas farther offshore (Ginsburg 1951)	Very rare	None
Symphurus plagiusa (Linnaeus) Blackcheek Tonguefish	Carnivore; predator on benthic invertebrates (Topp and Hoff 1972) (Reid 1954) (Springer and Woodburn 1960)	Demersal; widespread; (Walls 1975) (Ginsburg 1951)(Gunter 1945) (Gunter 1938)	Abundant; often taken in trawls, seines (Conner Unpubl.) (Tarbox 1974)	None
FAMILY BALISTIDAE TRIGGERFISHES AND FILEFISHES				
Aleuterus schoepfi (Walbaum) Orange Filefish		Pelagic; young associated with sargassum mats; also along beaches and in inland areas (Berry and Vogele 1961) (Walls 1975)	Rare; occasionally taken in seines, dipnets with sargassum (Conner Unpubl.)	None

continued

Appendix 6.3(30). Concluded.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Aleuterus scriptus (Osbeck) Scrawled Filefish		ditto	ditto	None
Monacanthus Lispidus (Linnaeus) Planehead Filefish	Carnivore; grazer on benthic invertebrates, fouling invertebrates (Springer and Woodburn 1960) (Reid 1954)	ditto	ditto	None
FAMILY OSTRACIIDAE BOXFISHES				
Lactophrys quadricornis (Linnaeus) Scrawled Cowfish		Pelagic; often near pilings, rigs, jetties (Conner Unpubl.)	Rare; occasionally taken in beach seines (Conner Unpubl.)	None
FAMILY TETRAODONTIDAE PUFFERS				
Lagocephalus laevigatus (Linnaeus) Smooth Puffer	- forage species	Pelagic, widespread (Shipp 1974)	Rare; occasionally appearing in summer (Conner Unpubl.)	None
Sphoeroides parvus Shipp and Verger Least Puffer	- forage species	Pelagic; widespread (Gunter 1938) (Shipp 1974)	Moderately abundant; mainly during warm months (Conner Unpubl.)	None
FAMILY DIODONTIDAE PORCUPINEFISHES				
Chilomycterus schoepfi (Walbaum) Striped Burrfish		Pelagic; widespread (Walls 1975) (Gunter 1945) (Gunter 1938) (Springer and Bullis 1956)	Moderately abundant; often taken by trawls, seines; mainly in warm months (Conner Unpubl.)	None
Diodon hystrix Linnaeus Porcupinefish		Pelagic; a tropical form usually not present, locally (Walls 1975) (Hoese 1958) (Springer and Bullis 1956)	Very rare	None

Appendix 6.3(31). Phytoplankton species found in inshore open waters in southeastern Louisiana (Day et al. 1976)

Taxa	Characteristic Salinity Range		
	Saline	Brackish	Fresh
COCCOID BLUE-GREEN			
Microcystis sp.			X
FILAMENTOUS BLUE-GREEN			
Anabaena sp.	X		X
Gomphospherea sp.			X
Merismopedia sp.	X		X
M. elegans			X
Oscillatoria sp.	X		X
Spirulina sp.			X
Gleocapsa sp.	X		
COCCOID GREEN			
Chlorella sp.	X	X	X
Tetraedron trigonium			X
FLAGELLATED GREEN			
Chlamydomonas sp.	X	X	X
CENTRIC DIATOMS			
Coscinodiscus sp.	X		
C. radiatus	X		
Cyclotella sp.	X		
C. meneghiniana			X
PENNATE DIATOMS			
Amphora sp.	X	X	
Cocconeis placentula		X	
Epithemia argus			X
Fragilaria sp.		X	

continued

Appendix 6.3(31). Continued

Species	Saline	Brackish	Fresh
Gomphenema sp.			X
Gyrosigma peisonis		X	
Navicula sp.	X	X	X
Hantzschia sp.			X
Nitzchia closterium	X	X	X
Pinnularia biceps			X
P. viridis		X	
Synedia sp.		X	
OTHER DIATOMS			
Actmorphycus sp.	X		
Biddulphia sp.	X		
Chaetocerus sp.	X		
Cylindrotheca closterium	X		
Niloschis pungens	X		
Rhizosolemia sp.	X		
Skeletonema sp.	X		
Thallasionema sp.	X		
DINOFLAGELLATES			
Ceratium fusus	X		
C. hirans	X		
C. trichocerus	X		
C. tripos	X		
C. vultur	X		
Peridinum sp.		X	X
Procontrum gracile	X		
Gonyaulax monilata	X		
Dinophysis candata	X		
EUGLENOIDS			
Euglena sp.			X
Phacus sp.			X
Trachelomonas sp.			X

continued

Appendix 6.3(31). Concluded.

Species	Saline	Brackish	Fresh
OTHERS			
Scenedesmus quadricauda			X
Chara sp.			X

Appendix 6.3(32). Components of the zooplankton recorded for Louisiana Inland Open Water Habitat.

Brackish water

Zooplankton: (from Bouchard and Turner 1976, Lafourche Parish; Denoux, 1976, Calcasieu estuary)

- Protozoa
- Coelenterata
- Ctenophora
- Rotifera
- Nematoda
- Mollusca
  - Gastropoda (larvae)
  - Pelecypoda (larvae)
- Annelida
  - Polychaeta
    - Nereidae
      - *Nereis succinea*
      - *Nearthes succinia*
  - Oligochaeta
  - Hirudinea
- Arthropoda
  - Crustacea
    - Cladocera (water fleas)
      - *Alona* sp.
    - Ostracoda
    - Copepoda
      - Calanoida (from Denoux, 1976, Calcasieu estuary)
        - Calanidae
          - *Eucalanus pileatus*
          - *Rhincalanus cornutus*
        - Paracalanidae
          - *Paracalanus aculeatus*
          - *Paracalanus crassirostris*
        - Centropagidae
          - *Centropages hamatus*
          - *Centropages velificatus*
          - *Osphranticum labronectum*
        - Diaptomidae
          - *Diaptomus dorsalis*
          - *D. reighardi*
          - *D. siciloides*
          - *D. signicauda*
          - *Diaptomus* sp.

continued

Appendix 6.3(32). Continued

- Temoridae
  - Eurytemora affinis
  - Temora turbinata
- Pontellidae
  - Labidocera aestiva
- Acartiidae
  - Acartia lilljeborgi
  - Acartia tonsa
- Cyclopoida
  - Cyclops vernalis
  - Cyclops panamensis
  - Eucyclops sp.
  - Oithona sp.
  - Onaca mediterranea
  - Onaea conifera
  - Saphirella sp.
- Harpacticoida
  - Macrosetella sp.
- Caligoida
  - Ergasilus sp.

Branchiura
- Argulus sp. (parasitic copepod)

Cirripedia
- Nauplii
- Cypris larvae

Malocostraca
- Amphipoda
- Isopoda
- Mysidacea
- Decapoda (larvae)
- Penaeidae (shrimps)
- Astacidae
  - Procambarus clarkii (zoea)

Arachnidae

Insecta
- Coleoptera (larvae)

Chaetognaths (arrow worms)
- Sagitta sp.

Chordata urochordata (tunicate larvae)
- Urochordata (tunicate larvae)

Vertebrata (fish larvae)

continued

Appendix 6.3(32). Continued

Fresh water: (mainly from Bouchard and Tuner 1976, Lafourche Parish)

I. Protozoa

II. Coelenterata
Hydrozoa

III. Ctenophora

IV. Rotifera

V. Nematoda

VI. Mollusca
Pelecypoda (larvae)

Gastropoda
Laevapex sp.
Physa sp.

VII. Annelida
Hirudinea

Oligochaeta

VIII. Arthropoda
Crustacea
Cladocera
Alona sp.
Bosmina longirostris
Ceriodaphnia lacustris
C. laticaudata
C. reticulata
C. rigaudi
Pseudochydoras globosus
Chydorus sphaericus
Dadaya macrops
Daphnia ambigua
D. laevis
D. parvula
Diaphanosoma branchyurum
Eubosmina tubocin
Diaphanosoma luchtenbergianum
Euryalona occidentalis
Ilyocryptus spinifer
I. sordidus
Kurzia latissima
Latinopsis fasiculata
L. occidentalis
Leydigia acanthoceroides
L. quadrangularis
Macrothrix laticornis
Moina micrura

continued

Appendix 6.3(32). Continued

- Moinodaphnia macleayii
- M. sp.
- Scaphelebris kingi
- Simocephalas expinosus
- S. vetulus
- Macrothrix rosea

Ostracoda

Copepoda

- Calanoida (from Denoux 1976)
  - Acartia tonsa
  - Diaptomus dorsalis
  - D. reighardi
  - D. siciloides
  - Eurytemora affinis
  - Osphranticum labronectum
- Cyclopoida
  - Cyclops nearcticus
  - C. panamensis
  - C. rubellus
  - C. thomasi
  - C. vernalis
  - Ectocyclops phaleratus
  - Eucyclops agilis
  - E. speratus
  - Halicyclops sp.
  - Macrocyclops albidus
  - M. ater
  - Mesocyclops edax
  - M. inversus
  - M. longisetus
  - Orthocyclops modestus
  - Paracyclops poppei
  - Tropocyclops prasinus
- Harpacticoida
- Caligoida
  - Caligus sp.
  - Ergasilus sp.

Branchiura

- Argulus sp. (parasitic copepod)

Malocostraca

- Amphipoda
- Decapoda
  - Penaeidae (shrimps)
  - Astacidae
    - Procambarus clarkii (zoea)

Insecta

- Coleoptera (larvae)
- Diptera (larvae)

continued

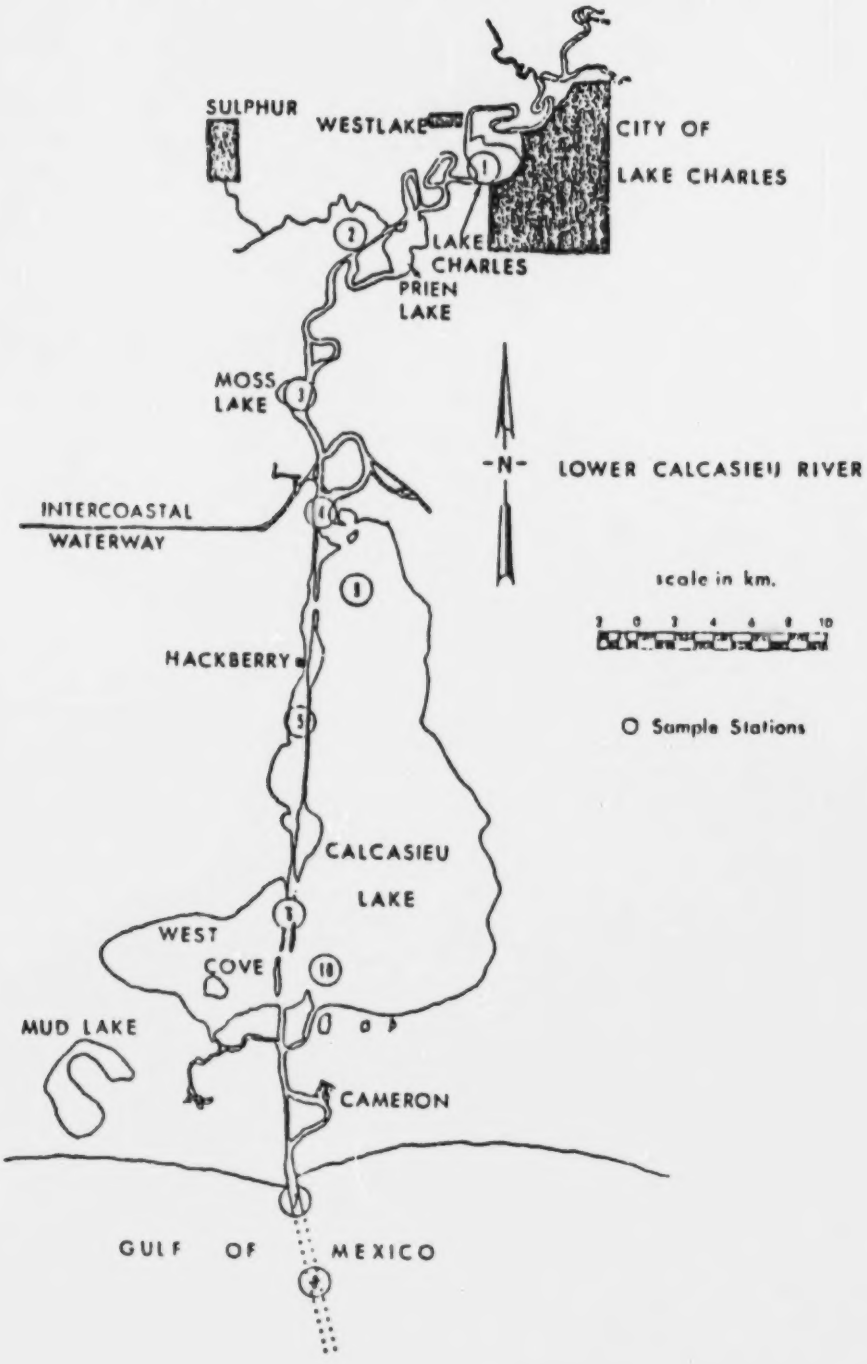
Appendix 6.3(32). Concluded

Ephemeroptera (nymphs)
Hemiptera
Odonata (nymphs)
Arachnida
Chordata

Vertebrata (fish larvae)

Appendix 6.3(33). Representative brackish water macroinvertebrates collected from the Calcasieu estuary (Stickle et al. 1975). (A) Map of Calcasieu estuary showing sampling stations; (B) Taxonomic listing.

(A)



Appendix 6.3(33). Continued

(B) The following list includes macroinvertebrates (collected by all methods) that were retained within a 1.0 mm mesh seive. Phylum, class, family, genas and species are given, where known. The order category is used only with the Phylum Arthropoda. The list is preliminary in nature in that many specimens have not yet been identified and others have not yet been verified.

Porifera
- Demospongiae
  - Clionidae
    - *Cliona* sp. (Boring sponges)

Coelenterata
- Hydrozoa
  - Hydractiniidae
    - *Hydractinia* sp. (Marine hydroids)
- Siphonophora
  - Physaliidae
    - *Physalia physalis* (Portugese man-of-war)
- Scyphozoa
  - Rhizostomae (Jellyfish)
    - *Stomolophus meleagris*
- Anthozoa (Corals and sea anemones)
  - Astraeidae
    - *Astrangia solitaria*
  - Actinostolidae
    - *Paranthus rapiformis*
  - Aiptasiomorphidae
    - *Aiptasia pallida*

Ctenophora
- Tentaculata
  - Mnemiidae
    - *Mnemiopsis mccradyi*
- Nuda
  - Beroidae
    - *Bero ovata*

Platyhelminthes
- Several species of flatworms have been collected

Rhynchocoela
- Hoplonermertea
  - Carcinonemertidae
    - *Carcinomertes* cf. tremaphoros
- Heteronmertea
  - Lineidae
    - *Cerebratulus lacteus*

continued

Appendix 6.3(33). Continued

Ectoprocta
- Gymnolaemata
  - Membraniporidae
    - *Membranipora* sp. (Colonial encrusting bryozoans)
  - Bugulidae
    - *Bugula* sp.

Annelida
- Polychaeta
  - Phyllodocidae
    - *Phyllodoce fragilis*
  - Nereidae
    - *Neanthes succinea*
  - Spionidae
    - *Polydora websteri*
    - *Spio* sp.
  - Onuphidae
    - *Diopatra cuprea*
  - Eunicidae
    - *Marphysa sanguinea*
    - *Eunice* sp.
  - Serpulidae
    - *Hydroides dianthus*
  - Pilargidae
    - *Loandalia american faureli*
- Hirudinea (Leeches)
  - Ichthyobdellidae
    - *Myzobdella* sp.

Arthropoda
- Crustacea
  - Cirripedia
    - Balanidae
      - *Balanus eburneus*
      - *B. improvisus*
      - *B. amphitrite*
      - *Chelonibia testudinaria*
  - Stomatopoda
    - Squillidae
      - *Squilla empusa*
  - Tanaidacea
    - Several species have been collected.

continued

Appendix 6.3(33). Continued

Isopoda
Cymothoidea
Lironeca ovalis
Aegathoa oculata

Amphipoda
Several species have been collected.

Decapoda
Penaeidae
Penaeus setiferus (White shrimp)
P. aztecus aztecus (Brown shrimp)
P. duorarum (Pink shrimp)
Trachypenaeus similis
Sicyonia dorsalis
Xiphopenaeus kroyeri

Sergestidae
Acetes americanus

Crustacea
Decapoda
Palaemonidae (Prawns)
Palaemonetes vulgaris
P. intermedius
P. pugio
Macrobrachium ohione (Freshwater prawn)

Ogyrididae
Ogyrides limicola

Alpheidae
Alpheus heterochaelis

Callianassidae
Gourretia latispina
Callianassa jamaicense

Diogenidae
Clibanarius vittatus

Paguridae
Pagurus pollicaris (Hermit crabs)

Portunidae
Callinectes sapidus
C. similis

Xanthidae
Panopeus herbstii (Mud crabs)
P. bermudensis
Hexapanopeus angustifrons

continued

Appendix 6.3(33). Continued

H. paulensis
Eurypanopeus depressus
Rhithropanopeus harrisii
Menippe mercenaria

Pinnotheridae (Oyster crabs)
Pinnixia chacei

Insecta
Diptera
Chironomidae
Several species have been collected.

Mollusca
Gastropoda
Epitoniidae
Epitonium rupicola
Epitonium sp.

Naticidae
Polinices duplicatus (Mollusk predator)

Columbellidae
Anachis obesa
A. avara

Nassariidae
Nassarius vibex (Basket shell snail)
N. acuta

Pyramidellidae
Littoridina sphinctosoma
Odostomia gibbosa
Odostomia cf. laevigata
Odostomia sp.

Muricidae
Thais haemastoma (Oyster drill)

Pelecypoda
Mytilidae
Geukensia demissa
Ischadium recurvum
Amygdalum papyria

Ostreidae
Crassostrea virginica

Dreissenidae
Congeria leucopheata

Petricolidae
Petricola pholadiformis

continued

Appendix 6.3(33). Concluded.

Mactridae
Spisula solidissima
Rangia cuneata
Mulinia lateralis

Tellinidae
Tellina texana
Macoma mitchelli

Solecurtidae
Tagelus plebius

Pholadidae
Barnea truncata
Diplothyra smithii

Teredinidae
Bankia gouldi

Cephalopoda
Loliginidae
Lolliguncula brevis

Echinodermata
Ophiuroidea
Amphiuridae
Hemipholas elongata

Appendix 6.3(34). Freshwater and brackish water benthic organisms in southeastern Louisiana Inland Open Water Habitat.

Freshwater macrobenthos (Thomas 1976, Lafourche Parish)

Arthropoda

- Crustacea
  - Gammaridae (Amphipods)
    - *Crangonyx* sp.
  - Talitridae (Amphipods)
    - *Hyalella azteca*
  - Decapoda (red swamp crayfish)
    - Cambaridae
      - *Procambarus clarkii*
      - *Cambarellus shufelatii*
      - *Orconectes lancifer*
  - Isopoda
  - Cirripedia
    - Balanidae
      - *Balanus* sp.
- Insecta (see freshwater meiobenthos)

Annelida

- Hirudinea (leeches)
  - Hirudidae
    - *Macrobdella ditetra*
  - Glossiphoniidae
    - *Placobdella* sp.

Bryozoa

- Phylactolaemata
  - Lophopodidae
    - *Pectinatella magnifica*

Mollusca

- Gastropoda
  - Ancylidae (limpets)
    - *Laevapex* sp.
  - Lymnaeidae
    - *Pseudosuccinea* sp.
  - Viviparidae
    - *Viviparus* sp.
  - Bythinidae
    - *Pomatopyrgus* sp.
  - Physidae
    - *Physa* sp.
  - Planorbidae
    - *Heliosoma* sp.
    - *Gyraulus* sp.

continued

Appendix 6.3(34). Continued

Pelecypoda (bivalves)
Unionidae (clams)
Anodonta grandis
Anodonta imbecillis
Villosa lienosa
Sphaeriidae
Sphaerium sp. (fingernail clams)

Freshwater meiobenthos (Thomas 1976), Lafourche Parish)

Nematoda

Annelida

Mollusca

Gastropoda

Pelecypoda

Arthropoda

Crustacea
Amphipoda
Asellus sp.
Hyalella azteca
Isopoda
Copepoda
Ostracoda
Cladocera
Decapods

Insecta
Ephemeropter (mayflies)
Caenidae
Baetida
Odonata (dragonflies, damselflies)
Gomphidae
Aeschnidae
Libellulidae
Lestidae
Coenagrionidae (damselflies)
Hemiptera (true bugs)
Corixidae (water boatmen)
Notonectidae (back swimmers)
Pleidae (pigmy backswimmers)
Naucoridae (creeping water bugs)
Belostomatidae (giant water bugs)
Nepidae (water scorpions)
Gerridae (water striders)
Veliidae (ripple bugs)
Hydrometridae (marsh treaders)
Hebridae (velvet water bugs)
Mesoveliidae (water treaders)
Saldidae (shore bugs)

continued

Appendix 6.3(34). Continued

Coleoptera
- Carabidae
- Ciccindellidae
- Haliplidae (crawling water beetles)
- Gyrinidae (whirligig beetles)
- Noteridae
- Dytiscidae (predaceous diving beetles)
- Hydrophilidae (water scavenger beetles)
- Helodidae

Megaloptera
- Corydalidae (dobsonflies and fishflies)

Trichoptera (caddis flies)
- Leptoceridae
- Psychomyiidae

Lepidoptera
- Pyralidae (aquatic caterpillars)

Diptera
- Tipulidae (crane flies)
- Culicidae (mosquitoes and phantom midges)
- Chironomidae (midges)
- Ceratopogonidae (biting midges)
- Stratiomyidae (soldier flies)
- Ephydridae (shore flies)
- Tabanidae (horseflies)

Brackish water macrobenthos (Thomas 1976, Lafourche Parish)

Nematoda (roundworms)

Arthropoda

- Cumacea
- Crustacea
  - Decapods (decapod larvae)
  - Amphipoda (scuds, sideswimmers)
    - Corophium sp.
    - Ampilesca sp.
  - Copepoda
  - Tanidaceans
  - Ostracoda (seed shrimps)
  - Cladocera (water fleas)
- Arachnida (spiders, mites)
- Pycnogonida (sea spiders)
- Insecta
  - Diptera
    - Chironomidae (midge larvae)

continued

Appendix 6.3(34). Concluded.

Annelida

Polychaeta
Oligochaeta

Rotatoria (rotifers)

Gastrotricha

Ciliata

Sarcodina
Foraminifera

Appendix 6.3(35). Representative vertebrates excluding fish, of the Inland Open Water Habitat in the Chenier Plain.

Species	Food	Seasonal Peaks Abundance or Activity	Remarks
AMPHIBIANS			
Notopthalmus viridescens Central newt			
Amphiuma tridactylum Three-toed amphiuma			
Acris crepitans Northern cricket frog			
Rana catesbeiana Bullfrog			
Rana clamitans Bronze frog			
Rana grylio Pig frog			
Rana palustris Pickerel frog			
Rana sphenocephala Southern leopard frog			
REPTILES			
Alligator mississippiensis American alligator			Endangered - Tex. Threatened - La.
Chelydra serpentina Snapping turtle	fish (35.4%); other vertebrates (1.1%); carrion (19.6%); invertebrates (7.8%); vegetable matter (36.2%) (Carr 1952)		

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Macroclemys temmincki Alligator snapping turtle	fish, frogs, snakes, other turtles, mussels, various aquatic grasses (Carr 1952)		
Kinosternon subrubrum Mississippi mud turtle	insects, small snails (Carr 1952)		
Sternotherus carinatus Razor-backed musk turtle			
Sternotherus odoratus (Stinkpot)			
Chrysemys concinna Mobile cooter			
Chrysemys floridana Missouri slider			
Chrysemys picta Southern painted turtle	juvenile: 13% plant, 85% animal adult: 88% plant, 10% animal (Carr 1952)		
Chrysemys scripta Red-eared turtle	juvenile: 30% plant, 70% animal (e.g., amphipods) adult: 89% plant, 11% animal (e.g., crayfish) (Carr 1952)		
Graptemys kohni Mississippi map turtle			
Graptemys pseudogeographica Sabine map turtle			
Malaclemys terrapin Diamondback terrapin	crustaceans, mollusks, roots of marsh plants, carrion (Carr 1952)		
Trionyx spiniferus Spiny softshell	carnivorous (Carr 1952)		
Trionyx muticus Smooth softshell	fish, crayfish, insect larvae, some plant material (Carr 1952)		

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Nerodia cyclopion Green water snake	Gambusia (77.6%); other fish (18.6%); tadpoles (3.5%) (Mushinsky and Hebrard 1976)	Mar.-Oct. (Mushinsky and Hebrard, unpublished manuscript)	
Nerodia fasciata confluens Broad-banded water snake	fish (86.9%); frogs and toads (6.4%); tadpoles (4.8%) (Mushinsky and Hebrard 1976)	Mar.-Sept. (Mushinsky and Hebrard, unpublished manuscript)	
Nerodia fasciata clarki Gulf salt marsh snake	fish (e.g., mullet), fiddler crabs (Wright and Wright 1957)		
Nerodia erythrogaster Yellow-bellied water snake	fish (65.3%); frogs and toads (27.0%); tadpoles (7.5%) (Mushinsky and Hebrard 1976)	Apr.-Aug. (Mushinsky and Hebrard, unpublished manuscript)	
Nerodia rhombifera Diamondback water snake	fish (92.7%); frogs and toads (1.0%); tadpoles (6.1%) (Mushinsky and Hebrard 1976)	Mar.-Oct. (Mushinsky and Hebrard, unpublished manuscript)	
Regina grahamii Graham's crayfish snake	crayfish (100%) (Mushinsky and Hebrard 1976)	Mar.-Sept. (Mushinsky and Hebrard, unpublished manuscript)	
Regina rigida Glossy crayfish snake	Siren, fish, crayfish (Wright and Wright 1957)		
Thamnophis proximus Western ribbon snake	insects, fish, frogs, salamanders, mice, toads (Wright and Wright 1957)		
Thamnophis sirtalis Garter snake	earthworms, mollusks, insects, fish, salamanders, toads, frogs, small mammals, small birds (Wright and Wright 1957)		
Agkistrodon piscivorus Cottonmouth	fish, salamanders, frogs, reptiles, birds, mammals (Wright and Wright 1957)		
BIRDS			
Gavia immer	principally fish; also crustaceans and roots of aquatic plants (Bent 1919)	Oct.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Podiceps auritus Horned grebe	shrimp and other crustaceans, small fish, some plant material, feathers (Bent 1919)	Oct.-Apr. (Lowery 1974a)	
Podiceps nigricollis Eared grebe	insects, shrimp, some water plants, feathers (Bent 1919)	Oct.-May (Lowery 1974a)	
Podilymbus podiceps Pied Billed grebe	mostly animal: aquatic worms and insects, snails, small frogs and fish. plants: seeds and soft parts (Bent 1919)	Oct.-Apr. (Lowery 1974a)	
Pelecanus erythrorhynchus American white pelican	fish (Bent 1922)	Sept.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Pelecanus occidentalis Brown pelican			Extinct in Chenier Plain
Phalacrocorax auritus Double-crested cormorant	mostly fish; rarely crustaceans, mollusks, eel grass (Bent 1922)	Sept.-Apr.	"Blue List" Nat. Aud. Soc. (1976)
Phalacrocorax olivaceus Olivaceous cormorant		Year-round	
Anhinga anhinga Anhinga	fish, leeches, shrimp, crayfish, insects, salamanders, frogs, young turtles and alligators, snakes (Bent 1922)	Mar.-Oct. (Lowery 1974a)	
Ardea herodias Great blue heron	mostly fish; also crusctaceans, insects, frogs, lizards, snakes, birds, small mammals (Bent 1926)	Year-round (Lowery 1974a)	
Butorides striatus Green heron	small fish, earthworms, insects, tadpoles, frogs, snakes, small mammals (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Florida caerulea Little blue heron	crayfish, small crabs, insects, fish, frogs, lizards (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Dichromanassa rufescens Reddish egret		Mar.-Oct. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Casmerodius albus Great egret	small fish, snails, fiddlers, insects, frogs, lizards, small snakes, mice, some plant material (Bent 1926)	Mar.-Nov. (Lowery 1974a)	
Egretta thula Snowy egret	shrimp, small fish, fiddlers, snails, insects, crayfish, small lizards, small frogs, small snakes (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Hydranassa tricolor Louisiana heron	slugs, snails, crayfish, insects, small fish, lizards, frogs (Bent 1926)	Mar.-Nov. (Lowery 1974a)	
Nycticorax nycticorax Black-crowned night heron	mostly fish (alive or dead), worms, crustaceans, insects (Bent 1926)		"Blue List" Nat. Aud. Soc. (1976)
Nyctanassa violacea Yellow-crowned night heron	snails, crayfish, crabs, fish, small reptiles, small mammals and birds (Bent 1926)	Mar.-Sept. (Lowery 1974a)	
Branta canadensis Canada goose	almost wholly plants: aquatic plants, marsh grasses, sedges, some mollusks, crustaceans (Bent 1925)	Oct.-Feb. (Lowery 1974a)	Reproducing flock developed at Rockefeller Refuge
Raser albifrons White-fronted goose	grain, tender shoots, occasional insects (Bent 1925)	Nov.-Mar. (Lowery 1974a)	
Anas platyrhynchos Mallard	90% plant: sedges, grasses, smartweeds, pondweeds, duckweeds, tubers, mast; 10% animal: insects, crustaceans, mollusks, fish (Bent 1923)	Oct.-Mar. (Lowery 1974a)	
Anas rubripes Black duck	mast, grain, mollusks, crustaceans (Bent 1923)	Oct.-Mar. (Lowery 1974a)	
Anas fulvigula Mottled duck	40% animal: mollusks, insects, crayfish, small fish 60% plant: mostly grasses (plants and seeds) (Bent 1923)	Year-round (Lowery 1974a)	
Anas acuta Northern pintail	13% animal: mollusks, crustaceans, insects 87% plant: pondweed, sedges and grasses (60%); other (27%) (Bent 1923)	Oct.-Mar. (Lowery 1974a)	
Anas crecca Green-winged teal	10% animal: insects, mollusks, crustaceans 90% plant: sedges, pondweeds and grasses (62%); other (28%) (Bent 1923)	Oct.-Mar. (Lowery 1974a)	

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Anas discors Blue-winged teal	30% animal: worms, mollusks, insects, tadpoles 70% plant: sedges, pondweeds and grasses (43.6%); other (26.4%) (Bent 1923)	Feb.-Apr.; Sept.-Nov. (Lowery 1974a)	
Anas clypeata Northern shoveler	animal: worms, small mollusks, insects, shrimp, small fish, small frogs. plant: buds and young shoots of rushes and other aquatics; grasses (Bent 1923)	Oct.-Apr. (Lowery 1974a)	
Anas americana American widgeon	90% plant, 10% animal (from Sept.-Apr.) (Bent 1923)	Oct.-Apr. (Lowery 1974a)	
Aix sponsa Wood duck	10% animal (Mostly insects); 90% plant; duckweeds, cypress cones and galls, sedge seeds and tubers, grasses and grass seeds, acorns, etc. (Bent 1923)	Year-round (Lowery 1974a)	
Aythya americana Redhead	stems and buds of *Valisineria*, other aquatic plants, marine animals (Bent 1923)	Nov.-Feb. (Lowery 1974a)	
Aythya collaris Ring-necked duck	19% animal: insects, mollusks; 81% plant: aquatic plants, sedges, grasses, smartweeds (Cottam 1939)	Oct.-Apr. (Lowery 1974a)	
Aythya valisineria Canvasback	*Valiseneria*, other aquatic plants, water lily and	Oct.-Mar. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Aythya marila Greater scaup	crustaceans, mollusks, aquatic plants (Bent 1923)	Nov.-Apr. (Lowery 1974a)	
Aythya affinis Lesser scaup	similar to *A. marila* (Bent 1923)	Oct.-Apr. (Lowery 1974a)	
Bucephala clangula Common goldeneye	similar to Scaup, but also minnows, small frogs, tadpoles, crayfish, snails, insects (Bent 1923)	Nov.-Feb. (Lowery 1974a)	
Bucephala albeola Bufflehead	79% animal: insects, crustaceans, mollusks, fish: 21% plant: pondweeds, misc. (Cottam 1939)	Nov.-Mar. (Lowery 1974a)	
Oxyura jamaicensis Ruddy duck	72% plant: aquatic plants, grasses, sedges; 28% animal: insects, mollusks, crustaceans (Cottam 1939)	Nov.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Lophodytes cucullatus Hooded merganser	mostly insects; also small fish, frogs, mollusks, crayfish, roots of aquatic plants, seeds, grain (Bent 1923)	Nov.-Apr. (Lowery 1974a)	
Mergus serrator Red-breasted merganser	mostly fish; also crustaceans and mollusks (Bent 1923)	Nov.-Apr. (Lowery 1974a)	
Haliaeetus leucocephalus Bald eagle	mostly fish (dead or alive); also rabbits, turtles, coots, ducks, grebes, herons, egrets, terns, shorebirds, geese (Bent 1937)	Sept.-May (Lowery 1974a)	Endangered
Pandion haliaetus Osprey	bowfin, carp, catfish, eel, flounder, goldfish, menhaden, mullet, pickerel, shad, sunfish. No carrion (Bent 1937)	Sept.-Dec.; Feb.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Fulica americana American coot	leaves, fronds, seeds and roots of aquatic plants; wild celery, algae, worms, snails, insects, small fish, tadpoles (Bent 1926)	Sept.-Apr. (Lowery 1974a)	
Himantopus mexicanus Black-necked stilt	99% animal: mostly insects; also crayfish, snails, tiny fish. 1% plant: seeds of aquatic and marsh plants (Bent 1927)	Mar.-Oct. (Lowery 1974a)	
Recurvirostra americana American avocet	65% animal: insects. 35% plant: seeds of aquatic and marsh plants (Bent 1927)	Sept.-May (Lowery 1974a)	
Charadrius semipalmatus Semipalmated plover	worms, small mollusks, crustaceans, insects (Bent 1929)	Mar.-May; Jul.-Nov. (Lowery 1974a)	
Charadrius vociferus Killdeer	98% insects and other animal matter (e.g., snails, crabs, crayfish); 2% plant: weed and grass seeds (Bent 1929)	Sept.-May (Lowery 1974a)	
Charadrius alexandrinus Snowy plover	marine worms, small crustaceans, other small animals (Bent 1929)	Jul.-Apr. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Pluvialis dominica American golden plover	almost entirely insects; also small mollusks and crustaceans; some grass seeds, seaweed (Bent 1929)	Mar.-May (Lowery 1974a)	

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Limosa fedoa Marbled godwit	insects, mollusks (Bent 1927)	Oct.-Nov. (Lowery 1974a)	
Numenius phaeopus Whimbrel	earthworms, sandworms, insects, mollusks, small crustaceans, some plant material	Apr.-May (Lowery 1974a)	
Numenius borealis Eskimo curlew			Last occurrence in La. 1889 (Lowery 1974)
Tringa melanoleuca Greater yellowlegs	small fish, occasionally insects (Bent 1927)	Feb.-May; Aug.-Nov. (Lowery 1974a)	
Tringa flavipes Lesser yellowlegs	mostly insects; also small crustaceans, small fish, worms (Bent 1927)	Feb.-May; Aug.-Nov. (Lowery 1974a)	
Tringa solitaria Solitary sandpiper	insects, spiders, worms, small crustaceans, small frogs (Bent 1929)	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	
Actitis macularia Spotted sandpiper	insects, occasionally small fish	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	
Steganopus tricolor Wilson's phalarope	aquatic insects and their larvae; amphipods; seeds of aquatic plants (Bent 1927)	Apr.-May; Jul.-Sept. (Lowery 1974a)	
Capella gallinago Common snipe	worms, insects, seeds of marsh plants (Bent 1927)	Oct.-Apr. (Lowery 1974a)	
Limnodromus griseus Short-billed dowitcher	worms, insects, fish eggs, small mollusks, seeds and roots of aquatic plants (Bent 1927)	Mar.-May; Sept.-Nov. (Lowery 1974a)	
Limnodromus scolopaceus Long-billed dowitcher	insect larvae, some plant material (Bent 1927)	Oct.-May (Lowery 1974a)	
Calidris canutus Red knot	small mollusks and crustaceans, marine worms, grass-	Mar.-Jun.; Jul.-Nov. (Lowery 1974a)	

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Calidris pusilla Semipalmated sandpiper	small mollusks, worms, insects, traces of plant material (Bent 1927)	Apr.-May; Sept.-Nov. (Lowery 1974a)	
Calidris mauri Western sandpiper	insects, marine worms, small snails (Bent 1927)	Aug.-May (Lowery 1974a)	
Calidris minutilla Least sandpiper	mostly insects; also small crustaceans, worms (Bent 1927)	Aug.-Apr. (Lowery 1974a)	
Calidris fuscicollis White-rumped sandpiper	78% animal: snails, marine worms 22% plant: seeds (Bent 1927)	Apr.-Jun. (Lowery 1974a)	
Calidris melanotos Pectoral sandpiper	insects (66%); amphipods (22.3%); algae (10.5%); also other animals, seeds (Bent 1927)	Mar.-May; Aug.-Oct. (Lowery 1974a)	
Calidris alpina Dunlin	small mollusks, small crustaceans, insects, marine worms, occasionally seeds (Bent 1927)	Oct.-May (Lowery 1974a)	
Calidris hemantopus Stilt sandpiper	animal (70%): small worms, mollusks, insects plant (30%): seeds (Bent 1927)	Apr.-May (Lowery 1974a)	
Larus argentatus Herring gull	dead fish and other detritus; live fish, crustaceans, mollusks, echinoderms, worms, insects (Bent 1921)	Nov.-Apr. (Lowery 1974a)	
Larus delawarensis Ring-billed gull	refuse, insects (Bent 1921)	Oct.-Apr. (Lowery 1974a)	
Larus atricilla Laughing full	mostly small fish; also eggs of other seabirds, refuse (Bent 1921)	Year-round (Lowery 1974a)	
Larus philadelphia Bonaparte's gull	small fish, crustaceans, marine worms, insects (Bent 1921)	Oct.-Apr. (Lowery 1974a)	
Gelochelidon nilotica Gull-billed tern	insects (Bent 1921)	Oct.-Apr. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Sterna forsteri Forster's tern	insects, floating carrion (Bent 1921)	Year-round (Lowery 1974a)	

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Sterna hirundo Common tern	almost wholly small fish; also shrimp and aquatic insects (Bent 1921)	Sept.-May (Lowery 1974a)	
Sterna albifrons Least tern	small fish; some crustaceans and insects (Bent 1921)	Apr.-Aug. (Lowery 1974a)	
Sterna maxima Royal tern	almost wholly small fish; also crabs, shrimp (Bent 1921)	Year-round (Lowery 1974a)	
Sterna caspia Caspian tern	almost wholly small fish; also shrimp and other surface-swimming aquatic life (Bent 1921)	Year-round (Lowery 1974a)	
Chlidonias niger Black tern	small fish, insects (Bent 1921)	Apr.-Sept. (Lowery 1974a) (non-breeding)	
Megaceryle alcyon Belted kingfisher	almost wholly fish; also insects, crustaceans, mollusks, amphibians, small reptiles, birds, mice, berries (Bent 1940)	Sept.-Apr. (Lowery 1974a)	
Iridoprocne bicolor Tree swallow	81% animal: insects and spiders 21% plant: seeds and berries (Bent 1942)	Sept.-May (Lowery 1974a)	
Riparia riparia Bank swallow	insects (Bent 1942)	Apr.-May; Jul.-Oct. (Lowery 1974a)	
Stelgidopteryx ruficollis Rough-winged swallow	insects (Bent 1942)	Mar.-Nov.	
Hirundo rustica Barn swallow	99% animal: insects; some spiders and snails (Bent 1942)	Mar.-May; Aug.-Nov. (Lowery 1974a)	
Petrochelidon pyrrhonota Cliff swallow	99% animal: insects (Bent 1942)	Apr.-Jun. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Corvus ossifragus Fish crow	carrion, crustaceans, fish, bird eggs, insects; berries, tree fruits, seeds, some grain (Bent 1946)	Year-round (Lowery 1974a)	
Seiurus noveboracensis Northern waterthrush	almost wholly animal: small worms, mollusks, crustaceans, small fish, insects, a few seeds (Bent 1953)	Aug.-Oct. (Lowery 1974a)	

continued

Appendix 6.3(35). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Seirus motacilla Louisiana waterthrush	98% animal: insects, small mollusks, small fish (Bent 1953)	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	
Agelaius phoeniceus Red-winged blackbird	73% plant: fruit, grain, weed seeds; 27% animal: mostly insects, some spiders and myriapods (Bent 1953)	Year-round (Lowery 1974a)	
Quiscalus mexicanus Great-tailed grackle	insects, fish, worms, small lizards, tadpoles, eggs and young of other birds (Bent 1958)	Mar.-Aug. (Lowery 1974a)	
Quiscalus major Boat-tailed grackle	insects, tadpoles, frogs, small fish, spiders (Bent 1958)	Year-round (Lowery 1974a)	
Quiscalus quiscula Common grackle	30% animal: insects, spiders, myriapods, crayfish, earthworms, sowbugs, reptiles, snails, fish, amphibians, birds, mice; 70% plant: grain (esp. corn), fruit, weed seeds, acorns (Bent 1958)	Year-round (Lowery 1974a)	
MAMMALS			
Myotis austroriparius Southeastern myotis	insects (Lowery 1974b)	Active year-round in warm weather; mating in spring (Lowery 1974b)	
Lasiurus borealis Red bat	insects (Lowery 1974b)	Active year-round in warm weather; young born May-June (Lowery 1974b)	
Lasiurus seminolus Seminole bat	insects (Lowery 1974b)	Active year-round in warm weather; young born in June (Lowery 1974b)	
Lasiurus cinereus Hoary bat	insects (Lowery 1974b)	Transient in coastal zone; spring and fall (Lowery 1974b)	
Ondata zibethicus Common muskrat		Active year-round; breeding peaks Nov. and Mar. (Lowery 1974b)	
Myocastor coypus Nutria	aquatic vegetation (Lowery 1974b)		

continued

Appendix 6.3(35). Concluded.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Tursiops truncatus Atlantic bottle-nosed dolphin	mullet, other fish, shrimp (Lowery 1974b)		Intelligent (Lilly 1967)
Lutra canadensis Nearctic river otter	crayfish, crabs, fish, frogs, turtles, snakes (Lowery 1974b)	Mating in late fall (Lowery 1974b)	
Trichechus manatus West Indian manatee	aquatic vegetation (Lowery 1974b)		Endangered

Appendix 6.3(36). Fishes of Inland Open Water Habitat in the Chenier Plain.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY CARCHARHINIDAE REQUIEM SHARKS				
Aprinonodon isodon (Valenciennes) Finetooth Shark	See Nearshore Gulf (Appendix 6.3(30))	Broadly euryhaline; to freshwater, but mainly in higher salinities, locally; lower bays, passes (Bigelow and Schroeder 1948) (Conner Unpubl.)	Rare; occasionally enter area during warm months (Conner Unpubl.)	None
Carcharhinus leucas (Valenciennes) Bull Shark	See Nearshore Gulf (Appendix 6.3(30))	Broadly euryhaline; to freshwater, widespread (seasonally); mainly open areas (bays, alkes, larger canals) (Bigelow and Schroeder 1948) (Conner Unpubl.)	Moderately abundant during warm months (Conner Unpubl.)	None
FAMILY SPHYRNIDAE HAMMERHEAD SHARKS				
Sphyrna tiburo (Linnaeus)	See Nearshore Gulf (Appendix 6.3(30))	To moderate salinity areas only; mainly near tidal passes, lower bays (Bigelow and Schroeder 1948) (Conner Unpubl.)	Sparse; see habitat entry	None
FAMILY PRISTIDAE SAWFISHES				
Pristis pectinata (Lathan) Smalltooth Sawfish	See Nearshore Gulf (Appendix 6.3 6.4(30))	Broadly euryhaline; to freshwater (Bigelow and Schroeder 1953)	Very rare; occasionally taken in trawls and trammel nets (Conner Unpubl.)	None

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY DASYATIDAE STINGRAYS				
Dasyatis americana (Hildebrand and Schroeder) Southern Stingray	See Nearshore Gulf (Appendix 6.3(30))	Broadly euryhaline, but mainly in higher salinity areas locally; lower bays, passes (Bigelow and Schroeder 1953) (Conner Unpubl.)	Moderately abundant in lower bays, passes, during warm months (Conner Unpubl.)	None
Dasyatis sabina (LeSueur) Atlantic Stingray	See Nearshore Gulf (Appendix 6.3(30))	Broadly euryhaline; to freshwater; widespread (Bigelow and Schroeder 1953) (Conner Unpubl.)	Abundant, especially in open bay areas, larger canals (Conner Unpubl.)	None
FAMILY MYLIOBATIDAE EAGLE RAYS				
Aetobatus narinari (Euphrasen) Spotted Eagle Ray	See Nearshore Gulf (Appendix 6.3(30))	High salinity areas only; lower bays, passes (Bigelow and Schroeder 1953) (Conner Unpubl.)	Rare; occasionally seen during warm months (Conner Unpubl.)	None
Rhinoptera bonasus (Mitchill) Cownose Ray	See Nearshore Gulf (Appendix 6.3(30))	Same as A. Narinari	Same as A. narinari	None
FAMILY LEPISOSTEIDAE GARS				
Lepisosteus oculatus (Winchell) Spotted Gar	Carnivore; predator/ scavenger on fishes, macroinvertebrates (Suttkus 1963)	Fresh to brackish areas, principally in protected areas; swamps, bayous, lakes, canals (Suttkus 1963) (Conner Unpubl.)	Locally abundant, especially in fresh swamps, bayous, canals (Conner Unpubl.)	Limited value as commercial fish (trammel nets); much less important than other gars

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Lepisosteus osseus (Linnaeus) Longnose Gar	See Nearshore Gulf Appendix 6.3(30)	Broadly euryhaline; widespread, but mainly in fresher areas, rivers, canal, lakes (Suttkus 1963) (Conner Unpubl.)	Moderately abundant in rivers, canals, lakes (Conner Unpubl.)	Minor value as commercial fish (trammel nets) (Conner Unpubl.)
Lepisosteus spatula (Lacepede) Alligator Gar	See Nearshore Gulf (Appendix 6.3(30)	See longnose gar entry; less rheophilic than L. osseus (Conner Unpubl.)	Moderately abundant in upper bays, canals, lakes, bayous (Conner Unpubl.)	Moderate value as commercial fish (trammel nets) (most important of gars) (Conner (Unpubl.)
FAMILY AMIIDAE BOWFINS				
Amia calva (Linnaeus) Bowfin	Carnivore; predator/ scavenger on fishes, amphibians, macro-invertebrates (Conner Unpubl.) (Anderson 1957)	Fresh to slightly brackish areas only; mainly in quiet water, swamps, canals, ditches, bayous, fresh lakes (Conner Unpubl.)	Locally abundant; see habitat entry (Conner Unpubl.)	Limited value as gamefish
FAMILY ELOPIDAE TARPONS				
Elops saurus (Linnaeus) Ladyfish - Adults	See Nearshore Gulf (Appendix 6.3(30))	Pelagic; mainly in high salinity areas; lower bays, passes (Gunter 1945) (Gunter 1938)	Locally abundant; see habitat entry; warm months (Conner Unpubl.)	None
Ladyfish - Young		Pelagic; broadly euryhaline, to fresh areas; larvae and juveniles widespread in inland open-water areas (Springer and Woodburn 1960) (Conner and Truesdale 1973) (Herke 1966) (Arnold, Wheeler, and Baxter 1960)	Moderately abundant along marsh edges, April-June (Conner Unpubl.) (Conner and Truesdale 1973) (Herke 1966)	None
Megalops atlantica (Valenciennes) Tarpon	Carnivore; voracious predator, chiefly on fishes (Hildebrand 1963) (Gowanloch 1933)	Pelagic; broadly euryhaline; to freshwater; mainly close to shore, passes, rivers (Hildebrand 1963) (Gowanloch 1933)	Formerly abundant in Calcasieu Pass, River, nearshore Gulf; especially August-October (Gowanloch 1933)	Very popular game-fish; has declined in recent decades, locally (Conner Unpubl.)

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY ANGULLIDAE FRESHWATER EELS				
Anguilla rostrata (LeSueur) American Eel - Adults	See Nearshore Gulf (Appendix 6.3(30))	Demersal; broadly euryhaline but mainly in brackish to fresh areas except during spawning migration; river channel, upper bay, larger bayous (Conner Unpubl.)	Sparse; very cryptic; occasionally taken in trawls, seines, hook and line (Conner Unpubl.)	None
American Eel - Young		Planktonic larvae mainly offshore; demersal elvers widespread in bays, bayous, lakes (Conner Unpubl.)	Sparse; very cryptic; occasionally taken by trawls, seines (Conner Unpubl.)	None
FAMILY MURAENIDAE MORAYS				
Gymnothorax moringua (Cuvier) Spotted Moray	See Nearshore Gulf (Appendix 6.3(30))	Demersal; higher salinity areas only; mainly near pilings, reefs, jetties (Conner Unpubl.)	Rare; occasionally taken by hook and line (Conner Unpubl.)	None
FAMILY OPHICHTHIDAE SNAKE EELS				
Myrophis punctatus (Lutken) Speckled Worm Eel - Adults	See Nearshore Gulf (Appendix 6.3(30))	Demersal; broadly euryhaline but adults mainly in moderate to high salinity areas (Gunter 1945) (Gunter 1938) (Perret 1971)	Moderately abundant, often taken in trawls (Conner Unpubl.)	None
Speckled Worm Eel - Young		Planktonic larvae mainly offshore; elvers broadly euryhaline to freshwater; widespread (Gunter 1945) (Norden 1966) (Gunter 1938) (Perret 1971)	Abundant; often taken in trawls, seines (Conner Unpubl.)	None

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Ophichthus gomesi (Castlenau)	See Nearshore Gulf (Appendix 6.3(30))	Demersal; mainly in high salinity areas; lower bays, tidal passes (Gunter 1945) (Gunter 1938)	Moderately abundant in high salinity areas (Conner Unpubl.) often taken in trawls	None
Shrimp Eel - Adults				
Shrimp Eels - Young		Planktonic larvae mainly offshore; elvers as adults (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Abundant; mainly during warm months (Conner Unpubl.)	None
FAMILY CLUPEIDAE HERRRINGS				
Alosa chrysochloris (Rafinesque)	See Nearshore Gulf (Appendix 6.3(30)) -forage species	Broadly euryhaline, but mainly in fresher areas; river channels, upper bays, fresh lakes (Hildebrand 1963) (Conner Unpubl.)	Very cyclic; year-class strengths seem to fluctuate radically; can be moderately abundant in some years (Conner Unpubl.)	Limited value as baitfish (dip-netted) for trot-lines), crawfish traps (Conner (Unpubl.)
Skipjack Herring - Adults				
Skipjack Herring - Young	-forage species	Platonic larvae mainly in rivers (Conner Unpubl.)	See above entry; in "good" years larvae moderately abundant April - July; juveniles moderately abundant June - October (Conner Unpubl.)	None
Brevoortia patronus (Goode)				
Gulf Menhaden				
Dorosoma cepedianum (LeSueur)	See Nearshore Gulf (Appendix 6.3(30)) -forage species	Broadly euryhaline, but mainly in fresher areas, where very widespread (Miller 1963) (Conner Unpubl.)	Abundant, locally; see habitat entry (Conner Unpubl.) (Herke 1966)	Moderate value in spring dipnet fishery for bait for trotlines and crawfish traps (Conner Unpubl.)
Gizzard Shad - Adults				
Gizzard Shad - Young	-forage species	Planktonic larvae mainly in rivers (Conner Unpubl.); juveniles as adults	Larvae abundant late March - June; juveniles moderately abundant June - October (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Dorosoma petenense (Gunther) Threadfin Shad - Adults	See Nearshore Gulf (Appendix 6.3(30)) -forage species	Same as gizzard shad	Same as gizzard shad	Limited value as baitfish
Threadfin Shad - Young	-forage species	Same as gizzard shad	Larvae abundant May - September; juveniles abundant June - November (Conner Unpubl.)	None
Halengula pensacolae (Gonde and Bean) Scaled Sardine	See Nearshore Gulf (Appendix 6.3(30))	To moderate salinity areas but mainly in higher salinity; lower bays, passes (Conner Unpubl.)	Moderately abundant, locally, during warm months (Conner Unpubl.)	None
??? Atlantic Thread Herring	See Nearshore Gulf (Appendix 6.3(30))	High salinity areas only; lower bays, passes (Conner Unpubl.)	Sparse; mainly limited outside inland area (Conner Unpubl.)	None
FAMILY ENGRAULIDAE ANCHOVIES				
Anchoa hepsetus (Linnaeus) Striped Anchovy	See Nearshore Gulf (Appendix 6.3(30)) -forage species	Pelagic; broadly euryhaline but mainly in high salinity areas; lower bays, passes (Gunter 1945) (Gunter 1938) (Norden 1966)	Locally abundant, often taken in seines, trawls, castnets (Conner Unpubl.) (Tarbox 1974) (Norden 1966); declining during cold months	None
Anchoa mitchilli (Valenciennes) Bay Anchovy - Adults	See Nearshore Gulf (Appendix 6.3(30)) -forage species	Pelagic; broadly euryhaline to fresh water; widespread (Gunter 1945) (Norden 1966) (Gunter 1938) (Perret 1971)	Abundant; increasing so in summer; usually taken in seines, trawls, castnets (Conner Unpubl.) (Herke 1966) (Tarbox 1974) (Norden 1966)	None
Bay Anchovy - Young	-forage species	Planktonic larvae widespread; juveniles as adults (Gunter 1945) (Norden 1966) (Gunter 1938) (Perret 1971)	Abundant year-round peak usually in early summer (Sabins 1973) (Tarbox 1974) (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY ESOCIDAE PIKES				
Esox americanus vermiculatus (LeSueur) Grass Pickerel	Carnivore; predator on fishes, amphibians, macroinvertebrates (Scott and Crossman 1973)	Freshwater only; mainly quiet, weedy areas; swamps, sluggish creeks, ditches, canals (Conner Unpubl.)	Sparse; generally solitary except at very young stages (Conner Unpubl.)	None
FAMILY SYNODONTIDAE LIZARDFISHES				
Synodus foetens (Linnaeus) Inshore Lizardfish	See Nearshore Gulf (Appendix 6.3(25))	Demersal; to moderate salinities; adults primarily offshore; juveniles mainly in lower bays, passes (Gunter 1945) (Gunter 1938) (Perret 1971)	Sparse; occasionally taken in trawls, seines, mainly in warm months (Tarbox 1974) (Conner Unpubl.)	None
FAMILY CYPRINIDAE MINNOWS AND CARPS				
Cyprinus carpio (Linnaeus) Carp	Omnivore; grazer/sucker type feeder on plants, benthic invertebrates, detritus, carrion (Scott and Crossman 1973) (Dalquest and Peters 1966)	Fresh to brackish areas; widespread, larvae planktonic; post larvae and juveniles mainly in temporarily flooded areas (Conner Unpubl.)	Moderately abundant in fresh areas; young abundant late March through summer (Conner Unpubl.)	Minor component of freshwater hoopnet fishery
Hybognathus nuchalis (Agassiz)	Omnivore; primarily herbivorous, grazer on detritus, benthic invertebrates (Scott and Crossman 1973)	Fresh areas only; swamps, bayous, rivers; mainly in quiet-water areas adjacent to currents (Fingerman and Suttkus 1961) (Conner Unpubl.)	Locally abundant especially as young in summer (Conner Unpubl.)	None
Notemigonus crysoleucas (Mitchill) Golden Shiner	Omnivore; midwater and surface grazer/predator on zooplankton, filamentous algae, periphyton, fouling invertebrates Scott and Crossman 1973) -forage species	Fresh to brackish areas; widespread (Conner Unpubl.)	Locally abundant, see habitat entry (Conner Unpubl.)	None; (those sold as bait brought in from minnow farms outside the area)

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Notropis atherinoides (Rafinesque) Emerald Shiner	Omnivore; predator/ grazer on zooplankton, filamentous algae (Scott and Crossman 1973) -forage species	Fresh areas only; large river channel (Conner Unpubl.) (Douglas 1974)	Locally abundant; river channel (Conner Unpubl.)	None
Notropis buchanani (Meek) Ghost Shiner	-forage species	Fresh areas only; river and large stream channels (Conner Unpubl.) (Douglas 1974)	Sparse; generally limited above Chenier Plain (Conner Unpubl.)	None
Notropis emiliae (Hay) Pugnose Minnow	-forage species	Fresh to slightly brackish areas; rivers, bayous, swamps, canals, ditches (Conner Unpubl.)	Locally abundant, especially in quiet weedy areas (Conner Unpubl.)	None
Notropis fumeus (Evermann) Ribbon Shiner	-forage species	Fresh areas only; swamps, creeks, ditches (Conner Unpubl.)	Locally abundant (Conner Unpubl.)	None
Notropis lutrensis (Baird and Girard) Red Shiner	-forage species	Fresh areas only; large river channel (Conner Unpubl.) (Douglas 1974)	Sparse; generally limited above Chenier Plain (Conner Unpubl.)	None
Notropis maculatus (Hay) Taillight Shiner	-forage species	Fresh areas only; swamps small sluggish streams (Conner Unpubl.)	Sparse; generally limited above Chenier Plain (Conner Unpubl.)	None
Notropis sabinae (Jordan and Gilbert) Sabine Shiner	-forage species	Fresh areas only; large river and stream channels (Conner Unpubl.)	See above entry	None
Notropis texanus (Girard) Weed Shiner	-forage species	Fresh to slightly brackish areas; river channel, creeks, bayous (Conner Unpubl.)	Locally abundant, especially in quiet weedy areas (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Notropis volucellus (Cope) Mimic Shiner	Omnivore; predator/ grazer on plankton, attached algae (Scott and Crossman 1973)	Fresh areas only; large river channel (Conner Unpubl.)	Sparse, mainly limited above Chenier Plain (Conner Unpubl.)	None
Pimephales vigilax (Baird and Girard) Bullhead Minnor	-forage fish	Same as mimic shiner	Same as mimic shiner	None
FAMILY CATOSTOMIDAE SUCKERS				
Carpiodes carpio (Rafinesque) River Carpsucker	Omnivore; sucker/grazer type feeder on benthic invertebrates, algae, detritus (Dalquest and Peters 1966)	Fresh areas only; large river channel (Douglas 1974) (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	Minor value as by-product of inland hoop and trammel net fisheries; sold in bulk for hog feed (Conner Unpubl.)
Erimyzon oblongus (Mitchill) Creek Chubsucker	Omnivore; sucker/grazer type feeder on benthic invertebrates, algae, detritus (Conner Unpubl.)	Fresh areas only; swamps, and small sluggish streams (Conner Unpubl.)	Same as river carpsucker	None
Ictiobus bubalus (Rafinesque) Smallmouth Buffalo - Adults	Omnivore; sucker/grazer type feeder on benthic invertebrates, algae, detritus (Dalquest and Peters 1966)	Fresh to brackish areas; widespread (Conner Unpubl.) (Herke 1966)	Locally abundant; upper bays, lakes, river channel, canals, bayous (Herke 1966) (Conner Unpubl.)	Principal component of inland hoop and trammel net fishery (Conner Unpubl.)
Smallmouth Buffalo - Young	Larvae feed mainly on zooplankton; juveniles as adults (Conner Unpubl.) (Dalquest and Peters 1966) -forage species	Fresh areas; larvae widespread in temporarily flooded areas; juveniles as adults (Conner Unpubl.)	Locally abundant; March through summer (Conner Unpubl.)	None
Ictiobus cyprinellus (Valenciennes) Bigmouth Buffalo	Omnivore; mainly carnivorous; sucker/ grazer on benthic invertebrates, zooplankton (Scott and Crossman 1973)	Fresh areas only; mainly river channel and flood-plain oxbows, bayous (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	Minor component of inland hoop-and trammel net fishery

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Minytrema melanops (Rafinesque)		Fresh areas only; river channel, swamps, bayous (Conner Unpubl.)	Sparse, mainly limited above Chenier Plain (Conner Unpubl.)	None
Spotted Sucker				
Moxostoma poecilurum (Jordan)		Fresh areas only; river and large stream channels (Conner Unpubl.)	Same as spotted sucker	None
Blacktail Redhorse				
FAMILY ICTALURIDAE FRESHWATER CATFISHES				
Ictalurus furcatus (LeSueur)	Omnivore; mainly carnivorous; predator/grazer on fishes, macroinvertebrates, carrion (Conner Unpubl.) (Darnell 1958)	Fresh to moderate salinity areas; mainly in fresh and brackish areas; river channel, bayous, upper bay, marsh lakes (Conner Unpubl.) (Herke 1966)	Abundant; often taken in trawls, commercial nets, hook and line (Conner Unpubl.) (Herke 1966)	Popular gamefish major component of inland trotline, hoopnet, trammel net catches (Conner Unpubl.); used in local fish culture
Blue Catfish - Adults				
Blue Catfish - Young	Omnivore; similar to adults but using more insect larvae, smaller invertebrates, detritus (Conner Unpubl.) (Darnell 1958)	Essentially as adults but preferring fresh areas; river channel (Conner Unpubl.)	Locally abundant; see habitat entry (Conner Unpubl.)	None
Ictalurus melas (Rafinesque)	Omnivore; predator/grazer on benthic invertebrates, algae, small fishes (Scott and Crossman 1973)	Fresh to slightly brackish; swamps, bayous, canals, ditches (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	None
Black Bullhead				
Ictalurus natalis (LeSueur)	Omnivore, predator/grazer on benthic invertebrates, carrion, detritus (Scott and Crossman 1973)	Same as black bullhead	Locally abundant, especially small canals, ditches, swamps (Conner Unpubl.)	None
Yellow Bullhead				
Ictalurus punctatus (Rafinesque)	See blue catfish entry	See blue catfish entry; this species is slightly less salt-tolerant and tends to prefer quieter water areas than I. furcatus (Conner Unpubl.)	See blue catfish entry; tends to predominate in fresher areas (Conner Unpubl.)	See blue catfish entry; this species tends to predominate in fresher areas and more benthic situations (Conner Unpubl.)
Channel Catfish - Adults				

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Channel Catfish - Young	Same as blue catfish	Same as blue catfish	Same as blue catfish, tends to predominate in fresher areas (Conner Unpubl.)	None
Notu.us gyrinus (Mitchill) Tadpole Madtom	Carnivore; predator/ grazer on benthic invertebrates (Scott and Crossman 1973)	Fresh areas only; swamps, canals, ditches (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	None
Pylodictis olivaris (Rafinesque) Flathead Catfish	Carnivore; predator on fishes, macroinvertebrates	Fresh to brackish areas; mainly in river channel (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	Popular gamefish; minor component of inland hoopnet and trotline catch (Conner Unpubl.)
FAMILY ARIIDAE SEA CATFISHES				
Arius felis (Linnaeus) Sea Catfish	See Nearshore Gulf (Appendix 6.3(30))	Broadly euryhaline, but mainly in high to moderate salinity areas; bays, large canals, bayous, marsh lakes (Conner Unpubl.) (Herke 1966) (Gunter 1945) (Gunter 1938) (Perret 1971)	Locally abundant, mainly during warm during months (Conner Unpubl.) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971)	None
Bagre marinus (Mitchill) Gafftopsail Catfish	See Nearshore Gulf (Appendix 6.3(30))	To moderate salinity areas; mainly limited to high salinity; lower bays, passes (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Tarbox 1974) (Gunter 1938) (Perret 1971)	Sparse; mainly limited to nearshore Gulf area except during warm months (Conner Unpubl.) (Tarbox 1974)	None
FAMILY APHREDODERIDAE PIRATE PERCHES				
Aphredoderus sayanus (Gilliams) Pirate Perch	Carnivore; predator on small fishes, macroinvertebrates (Conner Unpubl.)	Fresh to slightly brackish; swamps, canals, ditches, bayous (Conner Unpubl.)	Locally abundant, especially in fresh swamps, ditches, canals (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY BATRACHOIDIDAE TOADFISHES				
Opsanus beta (Goode and Bean) Gulf Toadfish	See Nearshore Gulf (Appendix 6.3(30))	Limited to areas of high salinity; mainly near reefs, pilings, jetties; lower bay, tidal passes (Conner Unpubl.)	Sparse; see habitat entry (Conner Unpubl.)	None
Porichthys porosissimus (Valenciennes) Atlantic Midshipman	See Nearshore Gulf (Appendix 6.3(30))	Limited to areas of high salinity; lower bays, passes (Conner Unpubl.) (Gunter 1945) (Gunter 1938) (Perret 1971)	Sparse; occasionally taken in summer trawls (Conner Unpubl.)	None
FAMILY GOBIESOCIDAE CLINGFISHES				
Cobiesox strumosus (Cope) Skilletfish	See Nearshore Gulf (Appendix 6.3(30))	High to moderate salinity areas; mainly near reefs, pilings, jetties (Conner Unpubl.) (Gunter 1945) (Gunter 1938) (Tarbox 1974)	Sparse; occasionally taken in trawls, dredges (Conner Unpubl.); larvae in plankton near reefs, late winter, spring (Conner Unpubl.)	None
FAMILY GADIDAE CODFISHES				
Urophysis floridanus (Bean and Dresel) Southern Hake	See Nearshore Gulf (Appendix 6.3(30))	Limited to areas of high salinity; lower bays, passes (Gunter 1945) (Gunter 1938) (Perret 1971) (Conner Unpubl.)	Sparse; occasionally taken in trawls, seines during colder months (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY OPHIDIIDAE CUSK-EELS AND BROTULAS				
Ophidion welshi (Nichols and Breder) Crested Cusk-Eel		Limited to areas of high salinity; lower bays, passes (Gunter 1945) (Norden 1966) (Gunter 1938) (Perret 1971)	Rare; occasionally taken in trawls (Conner Unpubl.)	None
FAMILY EXOCOETIDAE FLYINGFISHES AND HALFBEAKS				
Hyporhamphus unifasciatus (Ranzani) Halfbeak	See Nearshore Gulf (Appendix 6.3 (30))	High to moderate salinity areas; mainly in lower bays, canals, bayous, marsh lakes, passes (Gunter 1945) (Norden 1966) (Gunter 1938) (Conner Unpubl.)	Moderately abundant; mainly during warm months (Conner Unpubl.)	None
FAMILY BELONIDAE NEEDLEFISHES				
Strongylura marina (Walbaum) Atlantic Needlefish	See Nearshore Gulf (Appendix 6.3(30))	Broadly euryhaline; to freshwater; widespread (Gunter 1945) (Gunter 1938) (Norden 1966) (Perret 1971) (Conner Unpubl.)	Moderately abundant but seldom concentrated; often taken in seine, castnets (Tarbox 1974) (Conner Unpubl.) (Norden 1966)	None
FAMILY CYPRINODONTIDAE KILLFISHES				
Adinia xenica (Jordan and Gilbert) Diamond Killifish	Omnivore; mainly herbivorous; grazer on algae, periphyton, detritus (Day, Smith, Wagner and Stowe 1973) (Reubsamen 1972) (Odum 1971) (Hastings and Yerger 1971)	Broadly euryhaline; to freshwater, but mainly in high to moderate salinities; mainly along edges of protected areas; ponds, ditches, canals (Reubsamen 1972) (Hastings and Yerger 1971) (Conner Unpubl.)	Locally abundant, especially in winter and spring (Reubsamen 1972) (Herke 1966) (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Importance
Cyprinodon variegatus (Lacepede) Sheepshead Minnow	Omnivore; primarily herbivorous; grazer on algae, detritus, benthic invertebrates, periphyton (Reubsamen 1972) (Odum 1971) (Simpson and Gunter 1956) -forage species	Broadly euryhaline; widespread along shores and in protected marsh waters (Reubsamen 1972) (Martin 1970) (Herke 1966)	Abundant, peaks observed in winter and spring (Reubsamen 1972)	Minor value as baitfish
Fundulus chrysotus (Gunther) Golden Topminnow	-forage species	Fresh to slightly brackish areas; mainly in fresh swamps, ditches, canals, borrow pits (Conner Unpubl.) (Herke 1966)	Locally abundant; especially quiet weedy areas	None
Fundulus grandis (Baird and Girard) Gulf Killifish	Omnivore; mainly carnivorous; predator/grazer on small invertebrates, fishes, detritus (Reubsamen 1972) (Simpson and Gunter 1956) -forage species	See sheepshead minnow entry (Reubsamen 1972) (Simpson and Gunter 1956) (Herke 1966) (Conner Unpubl.)	See sheepshead minnow entry	Minor value as baitfish
Fundulus jenkinsi (Evermann) Saltmarsh Topminnow	-forage species	Broadly euryhaline; in protected marsh areas (Tarbox 1974) (Conner Unpubl.)	Rare, occasionally seined in marsh ditches, ponds (Conner Unpubl.)	None
Fundulus nottii (Agassiz) Starhead Topminnow	-forage species	Fresh areas only; swamps, ditches, canals, small streams; usually associated with vegetation (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	None
Fundulus olivaceus (Storer) Blackspotted Topminnow	-forage species	Fresh areas only; swamps, ditches, canals, river channels, bayous (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	None
Fundulus pulvereus (Evermann) BAyou Killifish	Carnivore; predator/grazer on small invertebrates (Reubsamen 1972) (Forman 1968) -forage species	Broadly euryhaline; in protected marsh areas; bayous, canals, ditches, ponds (Conner Unpubl.) (Tarbox 1974) (Reubsamen 1972)	Locally abundant, winter through spring (Tarbox 1974) (Reubsamen 1972) (Conner Unpubl.)	None
Fundulus similis (Baird and Girard) Longnose Killifish	Omnivore; predator/grazer on benthic invertebrates, detritus (Reubsamen 1972) (Forman 1968) -forage species	Broadly euryhaline but greatest concentrations in moderate to high salinities; along beaches, edges of marsh lakes, bayous (Reubsamen 1972) (Forman 1968) (Simpson and Gunter 1956) (Conner Unpubl.)	Locally abundant; lower bays, high salinity marshes (Conner Unpubl.)	None

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Lucania parva (Baird)	Omnivore; primarily carnivorous; predator/grazer on invertebrates, detritus (Reubsamen 1972) -forage species	Same as sheepshead minnow	Locally abundant; peaks in summer (Reubsamen 1972)	None
FAMILY POECILIIDAE LIVERBEARERS				
Gambusia affinis (Baird and Girard) Mosquitofish	Omnivore; primarily carnivorous; predator/grazer on invertebrates (Conner Unpubl.) (Simpson and Gunter 1956) -forage species	Broadly euryhaline, but mainly in fresh to brackish areas; along edges of protected areas; swamps, canals, ditches, bayous, ponds (Simpson and Gunter 1956) (Conner Unpubl.)	Locally abundant; especially in fresh areas (Conner Unpubl.)	None
Heterandria formosa (Agassiz) Least Killifish	Herbivore; grazer on epiphytes, benthic algae (Conner Unpubl.) -forage species	Fresh and brackish areas only; swamps, ditches, borrow pits; usually in weedy areas (Conner Unpubl.)	Rare; occasionally taken in ditches, borrow pits (Conner Unpubl.)	None
Poecilia latipinna (LeSueur) Sailfin Molly	Herbivore; grazer on epiphytes, benthic algae, detritus (Reubsamen 1972) (Odum 1971) -forage species	Broadly euryhaline to freshwater; widespread along protected shores, open beaches, bayous, ditches, canals, ponds (Simpson and Gunter 1956) (Herke 1966) (Conner Unpubl.)	Locally abundant year-round (Conner Unpubl.)	None
FAMILY ATHERINIDAE SILVERSIDES				
Labidesthes sicculus (Cope) Brook Silverside	Carnivore; predator on neustonic invertebrates, zooplankton (Conner Unpubl.) -forage species	Fresh areas only; swamps, small streams (Conner Unpubl.)	Locally abundant in fresh areas (Conner Unpubl.)	None
Membras marinica (Valenciennes) Rough Silverside	See Nearshore Gulf (Appendix 6.3(30)) -forage species	Broadly euryhaline; to freshwater; mainly along shores of bays, lakes, large canals, bayous (Gunter 1945) (Robbins 1969)	Locally abundant during summer (Tarbox 1974) (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Menidia beryllina (Cope) Tidewater Silverside	See Nearshore Gulf entry (Appendix 6.3(30)) -forage species	Broadly euryhaline; widespread (Gunter 1945) (Gunter 1938) (Wagner 1973) (Conner Unpubl.)	Abundant, peaks in summer (Tarbox 1974) (Norden 1966) (Conner Unpubl.)	None
FAMILY SYNGNATHIDAE PIPEFISHES AND SEAHORSES				
Syngnathus louisianae Gunther Chain Pipefish		High to moderate salinity areas; mainly associated with vegetation (Conner Unpubl.)	Rare; Occasionally taken by seines in higher salinity marsh ponds, ditches (Conner Unpubl.)	None
Syngnathus scovelli (Evermann and Kendalli) Gulf Pipefish	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline; to freshwater; widespread along edges and areas having dense vegetation; ditches, canals, ponds (Gunter 1945) (Gunter 1938)	Locally abundant; see habitat entry (Conner Unpubl.)	None
FAMILY PERCICHTHYIDAE TEMPERATE BASSES				
Morone chrysops (Rafinesque) White Bass	Carnivore; predator mainly on fishes (Scott and Crossman 1973)	Broadly euryhaline but mainly in fresh and brackish areas; pelagic in open waters of river channel, large bayous, canals, lakes, upper bays (Conner Unpubl.)	Locally abundant in fresher areas (Conner Unpubl.)	Minor value as gamefish
Morone mississippiensis Jordan and Eigenmann Yellow Bass	Carnivore; predator mainly on fishes (Conner Unpubl.)	See white bass entry; this form slightly more salt tolerant and more common in smaller water bodies (Conner Unpubl.)	Locally abundant; mainly in fresh areas, river channel, swamps (Conner Unpubl.)	Minor value as gamefish
Morone saxatilis (Walbaum) Striped Bass	See Nearshore Gulf entry (Appendix 6.3(30))		Rare; occasionally caught by hook and line, trammel nets (Conner Unpubl.)	See Nearshore Gulf entry (Appendix 6.3(25))

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY CENTRARCHIDAE SUNFISHES				
Centrarchus macropterus (Lacepede) Flier	Carnivore; predator on small fishes, macro-invertebrates (Conner Unpubl.)	Fresh to slightly brackish areas; swamps, bayous, sluggish streams (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	Limited value as gamefish
Elassoma zonatum Jordan Banded Pygmy Sunfish	Carnivore; predator/ grazer on small invertebrates (Conner Unpubl.)	Fresh to slightly brackish areas; swamps, ditches, small streams; in vegetation (Conner Unpubl.) (Douglas 1974)	Locally abundant in fresh areas (Conner Unpubl.)	None
Lepomis cyanellus Rafinesque Green Sunfish	Carnivore; predator on fishes, macro-invertebrates (Scott and Crossman 1973)	Fresh to brackish areas; backwaters of streams, swamps, ditches, canals (Douglas 1974) (Conner Unpubl.)	Sparse, mainly limited above Chenier Plain (Conner Unpubl.)	None
Lepomis gulosus (Cuvier) Warmouth	Carnivore; predator on fishes, macro-invertebrates (Larimore 1957) (Conner Unpubl.)	Fresh to brackish areas; swamps, borrow pits, canals, bayous (Douglas 1974) (Conner Unpubl.)	Locally abundant; especially in swamps (Conner Unpubl.)	Minor value as gamefish
Lepomis macrochirus Rafinesque Bluegill	Omnivore; predator/ grazer on inverte-brates, algae (Scott and Crossman 1973)	Fresh to brackish areas; widespread in fresh habitats (Conner Unpubl.)	Locally abundant (Conner Unpubl.)	Minor value as gamefish
Lepomis marginatus (Holbrook) Dollar Sunfish		Fresh to brackish areas; especially swamps, borrow pits (Conner Unpubl.)	Locally abundant in fresh areas (Conner Unpubl.)	None
Lepomis megalotis (Rafinesque) Longear Sunfish	Carnivore; predator/ grazer on inverte-brates, especially insects (Scott and Crossman 1973)	Fresh areas only; mainly in rivers, creeks (Douglas 1974) (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	None
Lepomis microlophus (Gunther) Redear Sunfish	Omnivore; primarily carnivorous; predator/ grazer on inverte-brates, mainly molluscs (Conner Unpubl.)	Fresh to brackish areas; mainly in swamps, borrow pits, canals, bayous, lakes (Douglas 1974) (Conner Unpubl.)	Moderately abundant in fresh lakes, ponds borrow pits (Conner Unpubl.)	Minor value as gamefish

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Lepomis punctatus (Valenciennes) Spotted Sunfish	See redear sunfish entry	Fresh areas only; mainly in swamps (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	Minor value as gamefish
Lepomis symmetricus Forbes Bantam Sunfish		Fresh to brackish areas; common in swamps, borrow pits, ditches (Conner Unpubl.)	Locally abundant (Conner Unpubl.)	None
Micropterus salmoides (Lacepede) Largemouth Bass - Adults	Carnivore; predator mainly on fishes, macroinvertebrates (Conner Unpubl.)	Fresh to brackish; widespread in lentic situations, especially in areas of low turbidity (Douglas 1974) (Conner Unpubl.)	Abundant in lentic habitats, sluggish streams, canals, bayous (Conner Unpubl.)	Popular gamefish Large quantities caught in marsh ponds, impoundments
Largemouth Bass - Young	Carnivore; predator on zooplankton, later insects, small fishes (Conner Unpubl.)	Mainly in fresh areas; shallow marginal zones of swamps, stream backwaters (Conner Unpubl.)	Moderately abundant in lentic freshwater areas, April through summer (Conner Unpubl.)	None
Pomoxis annularis Rafinesque White Crappie	Carnivore; predator on fishes, macroinvertebrates; larvae feed on zooplankton (Scott and Crossman 1973) (Conner Unpubl.)	Fresh to brackish; widespread in lentic and stream habitats (Douglas 1974) (Conner Unpubl.)	Moderately abundant in fresh areas; young abundant March through July (Conner Unpubl.)	Popular gamefish less important, locally than next species (Conner Unpubl.)
Pomoxis nigromaculatus (LeSueur) Black Crappie	Same as white crappie	See white crappie entry; this species more common in less turbid lentic situations (Conner Unpubl.)	Moderately abundant in fresh areas, especially quiet weedy areas (Conner Unpubl.)	Popular gamefish see above entry

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY PERCIDAE PERCHES				
Ethoestoma chlorosomum (Hay) Bluntnose Darter	Carnivore; predator on small invertebrates (Conner Unpubl.)	Fresh areas only; mainly in swamps, ditches, bayous (Conner Unpubl.) (Douglas 1974)	Sparse; mainly limited above Chenier Plain	None
Etheostoma gracile (Girard) Slough Darter	Carnivore; predator on small invertebrates (Braasch and Smith 1967)	Fresh areas only; mainly in ditches, small, sluggish streams (Conner Unpubl.)	Sparse; mainly limited above Chenier Plain (Conner Unpubl.)	None
Etheostoma proeliare (Hay) Cypress Darter		Fresh areas only; mainly in swamps, bayous, small sluggish streams with logs and other forest debris (Conner Unpubl.)	Locally abundant in some freshwater areas (Conner Unpubl.)	None
FAMILY POMATOMIDAE BLUEFISHES				
Pomatomus saltatrix (Linnaeus) Bluefish	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline, but mainly in high salinity areas offshore (Gunter 1945) (Gunter 1938) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971)	Rare; occasionally caught by anglers in warm months (Conner Unpubl.)	Limited value as gamefish; mainly farther offshore
FAMILY CARANGIDAE JACKS				
Caranx hippos (Linnaeus) Crevalle Jack - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline but mainly in high to moderate salinities (Gunter 1945) (Gunter 1938); lower bays, tidal pass; marsh lakes, bayous (Conner Unpubl.) (Herke 1966)	Moderately abundant during summer and fall (Tarbox 1974) (Gunter 1938) (Conner Unpubl.)	None
Chloroscombrus chrysurus (Linnaeus) Atlantic Bumper - Young	See Nearshore Gulf entry (Appendix 6.3(30))	High to moderate salinity areas; lower bay, tidal passes (Gunter 1945) (Gunter 1938)	Moderately abundant, especially during summer (Tarbox 1974) (Conner Unpubl.)	None

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Oligoplites saurus (Bloch and Schneider) Leatherjacket - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline; to freshwater, but mainly in moderate to high salinity areas; bay shores, bayous, marsh lakes (Conner Unpubl.)	Moderately abundant, during warm months (Tarbox 1974) (Perret 1971) (Conner Unpubl.)	None
Selene vomer (Linnaeus) Lookdown - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly high salinity areas; lower bays, passes (Gunter 1945) (Gunter 1938) (Perret 1971) (Tarbox 1974)	Rare; occasionally taken in seines, trawls (Tarbox 1974) (Conner Unpubl.)	None
Trachinotus carolinus (Linnaeus) Florida Pompano - Young	See Nearshore Gulf entry (Appendix 6.3(30))	High salinity areas only; mainly outside of inland area (Bellinger and Avault, Jr. 1971) (Tarbox 1974) (Gunter Unpubl.)	Rare; occasionally taken in seines (Conner Unpubl.) in warm months	None
Trachinotus falcatus (Linnaeus) Permit - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly outside inland area (Tarbox 1974) (Perret 1971)	Very rare; occasionally taken in tidal pass (Conner Unpubl.)	None
Vomer setapinnis (Mitchill) Atlantic Moonfish - Young	See Nearshore Gulf entry (Appendix 6.3(30))	High salinity areas only; lower bays, tidal pass (Gunter 1945) (Gunter 1938)	Sparse; occasionally taken in summer reines, trawls (Conner Unpubl.)	None
FAMILY LUTJANIDAE SNAPPERS				
Lutjanus griseus (Linnaeus) Gray Snapper - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline, but mainly in areas of high salinity; near reefs; lower bays, passes; near vegetation (Springer and Woodburn 1960) (Gunter 1945) (Gunter 1938)	Sparse; occasionally taken in seines (Conner Unpubl.)	None
FAMILY LOBOTIDAE TRIPLETAILS				
Lobotes surinamensis (Bloch) Tripletail - Young		Mainly high salinity areas; near cover (Vegetation, pilings) (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Rare; occasionally taken in seines (Conner Unpubl.)	Limited value as gamefish, mainly offshore

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY GERREIDAE MOJARRAS				
Eucinostomus argenteus Baird and Girard Spotfin Mojarra - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline, but mainly in moderate to high salinities; widespread (Gunter 1945) (Gunter 1938) (Perret 1971)	Moderately abundant in shore seines during warm months (Conner Unpubl.)	None
FAMILY POMADASYIDAE GRUNTS				
Orthopristis chrysoptera (Linnaeus) Pigfish - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly high salinity areas; lower bays, tidal passes (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Moderately abundant during summer (Sabins 1973) (Conner Unpubl.)	None
FAMILY SPARIDAE PORGIES				
Archosargus probatocephalus (Walbaum) Sheepshead - Adults	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly in high salinity areas; lower bays, tidal passes; near pilings, reefs (Gunter 1945) (Gunter 1938) (Perret 1971) (Conner Unpubl.)	Moderately abundant, year-round; often taken by anglers, trammel nets (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Conner Unpubl.)	Minor value as commercial fish (trammel net); popular gamefish
Sheepshead - Young		Broadly euryhaline; widespread in protected waters, marsh bayous, canals, lakes (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Moderately abundant, mainly spring, early summer (Conner Unpubl.)	None
Lagodon rhomboides (Linnaeus) Pinfish - Adults	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline, but mainly in high to moderate salinity areas; lower bays, passes, marsh lakes, bayous (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Moderately abundant, especially during warm months (Conner Unpubl.)	None
Pinfish - Young		Broadly euryhaline; to freshwater; widespread along shores and in marsh bayous, ditches, ponds (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Abundant, late winter through summer (Sabins 1973) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Conner Unpubl.)	None

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY SCIAENIDAE DRUMS				
Aplodinotus grunniens Rafinesque Freshwater Drum - Adults	Carnivore; predator (grazer on benthic invertebrates, especially mollusks, and fishes (Conner Unpubl.)	Fresh to brackish areas; especially river channel (Conner Unpubl.)	Locally abundant year-round (Conner Unpubl.)	Major component of inland hoop net catch. Minor gamefish
Freshwater Drum - Young	Omnivore; larvae predators on zooplankton; juveniles grazers on benthic invertebrates, detritus (Conner Unpubl.)	Larvae planktonic in river, upper bays, juveniles demersal, especially over soft mud/detritus bottoms (Conner Unpubl.)	Locally abundant, May through early fall (Conner Unpubl.)	None
Bairdiella chrysura (Lacepede) Silver Perch	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline but mainly in moderate to high salinity; widespread (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Locally abundant, especially as post-larval and early juveniles, April through early summer (Tarbox 1974) (Conner Unpubl.)	None
Cynoscion arenarius Ginsbury Sand Seatrout - Adults	See Nearshore Gulf entry (Appendix 6.3(30))	Moderate to high salinity areas; widespread in bays, marsh lakes, bayous (Gunter 1945) (Gunter 1938) (Perret 1971)	Moderately abundant, declining in cold months (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Popular gamefish; minor component of inland trammel net catch; but see NG entry
Sand Seatrout - Young		Broadly euryhaline; widespread (Gunter 1945) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1938) (Conner Unpubl.); very small juveniles preferring protected marsh waters (Conner and Truesdale 1973) (Conner Unpubl.)	Abundant, April through early Fall (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Tarbox 1974) (Conner Unpubl.)	None
Cynoscion nebulosus (Cuvier) Spotted Seatrout				
Larimus fasciatus Holbrook Banded Drum		Mainly moderate to high salinity areas; usually outside of inland areas (Gunter 1938) (Gunter 1945)	Sparse; occasionally taken in winter and spring trawls, seines (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Tarbox 1974) (Conner Unpubl.)	None

continued

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Leiostomus xanthurus Lacepede Spot - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline, but mainly in moderate to high salinity areas; postlarvae and early juveniles mainly in protected marsh waters; older juveniles widespread (Conner and Truesdale 1973) (Parker 1971) (Herke 1966)	Abundant, especially late spring through summer (Tarbox 1974) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Parker 1971)	See Nearshore Gulf entry
Menticirrhus americanus (Linnaeus) Southern Kingfish	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly in high salinity areas; lower bays, tidal passes; mainly in unprotected areas along shores (Tarbox 1974) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Conner Unpubl.) (Wagner 1973)	Locally abundant, mainly during summer and fall (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1938) (Conner Unpubl.)	See Nearshore Gulf entry
Micropogon undulatus (Linnaeus) Atlantic Croaker				
Pogonias cromis (Linnaeus) Black Drum - Adults	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline, but mainly in high to moderate salinity areas; lower bays, passes; mainly near reefs (Bigelow and Schroeder 1948) (Gunter 1945) (Gunter 1938) (Pearson 1929) (Conner Unpubl.)	Moderately abundant, often taken by trammel nets, hook and line (Conner Unpubl.)	See Nearshore Gulf entry
Black Drum - Young		Larvae mainly in offshore areas; postlarvae and juveniles occasionally entering bays, lower marshes (Pearson 1929) (Gunter 1938) (Conner Unpubl.)	Sparse; occasionally taken in seines (Conner Unpubl.)	None
Sciaenops ocellata (Linnaeus) Red Drum				
Stellifer lanceolatus (Holbrook) Star Drum	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly in high salinity areas; lower bays, passes (Pearson 1929) (Gunter 1938) (Conner Unpubl.)	Sparse; occasionally taken in trawls (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY EPHIPPIDAE SPADEFISHES				
Chaetodipterus faber Atlantic Spadefish - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly in high salinity areas; near tidal passes (Tarbox 1974) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Conner Unpubl.)	Moderately abundant, locally, especially during summer and fall (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Tarbox 1974) (Conner Unpubl.)	None
FAMILY MUGILIDAE MULLETS				
Mugil cephalus Linnaeus Striped Mullet - Adults	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline; to freshwater; widespread (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Tarbox 1974) (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Abundant, year-round (Conner Unpubl.)	None
Striped Mullet - Young	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline; to freshwater; widespread (Tarbox 1974) (Conner Unpubl.) as juveniles; larvae planktonic offshore (Anderson 1958)	Abundant, especially late winter, early spring (Tarbox 1974) (Conner Unpubl.)	None
Mugil curema Valenciennes White Mullet - Adults		Broadly euryhaline; to freshwater; widespread (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Moderately abundant during warm months (Conner Unpubl.)	None
White Mullet - Young		Larvae planktonic offshore (Anderson 1957); juveniles broadly euryhaline but mainly in high salinity areas (Tarbox 1974) (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Moderately abundant, locally, late spring, early summer (Tarbox 1974) (Conner Unpubl.)	None
FAMILY POLYNEMIDAE THREADFINS				
Polydactylus octonemus (Girard) Atlantic Threadfin	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly in high salinity areas; open bay, passes (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Locally abundant; late spring through summer (Tarbox 1974) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Conner Unpubl.)	None

Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY BLENNIIDAE COMBTOOTH BLENNIES				
Chasmodes bosquianus (Lacepede) Striped Blenny	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly high salinity areas; near reefs (Conner Unpubl.)	Rare; Occasionally taken in trawsl (Conner Unpubl.)	None
Hypsoblennius hentzi Feather Blenny		Same as striped blenny	Same as striped blenny	None
Hypsoblennius ionthas (Jordan and Gilbert) Freckled Blenny	See Nearshore Gulf entry (Appendix 6.3(30))	See above entry	See above entry	None
FAMILY ELEOTRIDAE SLEEPERS				
Dormitator maculatus (Block) Fat Sleeper	Carnivore; predator on fishes, macro-invertebrates (Conner Unpubl.)	Broadly euryhaline; mainly in ditches, canals, bayous (Conner Unpubl.) (Dawson 1969)	Moderately abundant, locally (Conner Unpubl.)	None
Elotris pisonis (Gmelin) Spinycheek Sleeper	Same as fat sleeper	Broadly euryhaline; but mainly in fresh or brackish areas; canals, ditches (Dawson 1969) (Conner Unpubl.)	Very rare (Conner Unpubl.)	None
FAMILY GOBIIDAE GOBIES				
Evorthodus lyricus (Girard) Lyre Goby		Broadly euryhaline; but mainly in moderate to high salinity areas; ditches, canals, marsh ponds (Dawson 1969) (Conner Unpubl.)	Locally abundant (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Gobioides brossonneti Lacepede Violet Goby		Broadly euryhaline; but mainly in high salinity areas; open bays, bayous, marsh lakes (Dawson 1969) (Conner Unpubl.)	Sparse; occasionally taken in trawls (Conner Unpubl.)	None
Gobionellus boleosoma (Jordan and Gilbert) Darter Goby	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline; widespread (Dawson 1969) (Conner Unpubl.)	Locally abundant, especially during cold months (Conner Unpubl.)	None
Gobionellus hastatus Girard Sharptail Goby	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline; widespread (Dawson 1969) (Conner Unpubl.) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971)	Sparse; occasionally taken in trawls (Conner Unpubl.)	None
Gobionellus shufeldti (Jordan and Gilbert) Freshwater Goby		Broadly euryhaline, but mainly in fresh to brackish areas, where widespread (Dawson 1969) (Conner Unpubl.)	Locally abundant (Conner Unpubl.)	None
Gobiosoma bosci (Lacepede) Naked Goby	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline, widespread (Dawson 1969) (Conner Unpubl.)	Locally abundant, on reefs, (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971), marsh ponds, ditches (Conner Unpubl.) (Reubsamen 1972)	None
Gobiosoma robustum Ginsburg Cod Goby	Carnivore; predator/ grazer on benthic invertebrates (Springer and Woodburn 1960)	Broadly euryhaline, but mainly in moderate to high salinities; mainly associated with vegetation (Dawson 1969) (Conner Unpubl.)	Sparse; occasionally taken in seines (Conner Unpubl.)	None
Microgobius gulosus (Girard) Clown Goby	Omnivore; predator/ grazer on benthic invertebrates, algae (Springer and Woodburn 1960)	Broadly euryhaline, widespread; mainly near vegetation (Conner Unpubl.)	Sparse; occasionally taken in trawls, seines (Conner Unpubl.)	None
Microgobius thalassinus (Jordan and Gilbert) Green Goby		Broadly eruyhaline, but mainly in high salinity areas; near vegetation (Dawson 1969) (Conner Unpubl.)	Very rare; occasionally taken in seines (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY MICRODESMIDAE WORMFISHES				
Microdesmus longipinnis (Weymouth) Pink Wormfish		Mainly high salinity areas; burrowing in mud bottoms; nocturnally pelagic (Dawson 1969)	Very rare; occasionally taken in trawls (Conner Unpubl.)	None
FAMILY TRICHIURIDAE CUTLASSFISHES				
Trichiurus lepturus Linnaeus Atlantic Cutlassfish	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly in high salinity areas; lower bays, passes (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938)	Moderately abundant; often taken by trawls, hook and line (Conner Unpubl.)	Minor value as bait fish
FAMILY SCOMBRIDAE MACKERELS AND TUNAS				
Scomberomorus maculatus (Mitchill) Spanish Mackerel	See Nearshore Gulf entry (Appendix 6.3(30))	see above entry (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938)	Moderately abundant; locally, often taken in seines, trawls, during warm months (Conner Unpubl.)	Minor value as gamefish (mainly nearshore Gulf)
FAMILY STROMATEIDAE BUTTERFISHES				
Peprilus alepidotus (Linnaeus) Harvestfish	See Nearshore Gulf entry (Appendix 6.3(30))	see above entry (Perret, Barret, Latapie, Pollard, Mock, Adkins, GAidry, and White 1971) (Gunter 1945) (Gunter 1938)	Locally abundant; often taken in seines during warm months (Conner Unpubl.)	None
Peprilus burti Fowler Gulf Butterfish	See Nearshore Gulf entry (Appendix 6.3(30))	see above entry (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938)	Locally abundant, especially late spring, early summer (Conner Unpubl._	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY TRIGLIDAE SEAROBINS				
Prionotus rubio Jordan Blackfin Searobin		Mainly high salinity areas; lower bays, passes (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938)	Sparse; occasionally taken in trawls (Conner Unpubl.)	None
Prionotus scitulus Jordan and Gilbert Leopard Searobin	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly high salinity areas (Gunter 1945) (Robbins 1969)	Very rare; occasionally taken in trawls (Conner Unpubl.)	None
Prionotus tribulus Cuvier Bighead Searobin		Moderate to high salinity areas; widespread (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938)	Moderately abundant; especially during cold months (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gwidry, and White 1971) (Conner Unpubl.)	None
FAMILY BOTHIDAE LEFTEYE FLOUNDERS				
Ancylopsetta ocellata (Goode and Bean) Ocellated Flounder	See Nearshore Gulf entry (Appendix 6.3(30))	Limited to high salinity areas; lower bays, passes (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938)	Rare; occasionally taken by trawl, hook and line (Conner Unpubl.)	None
Citharichthys macrops Dresel Spotted Whiff	See Nearshore Gulf entry (Appendix 6.3(30))	Limited to high salinity areas; lower bay, passes (Walls 1975) (Topp and Hoff, Jr. 1972) (Conner Unpubl.)	Rare; occasionally taken in trawls (Conner Unpubl.)	None
Citharichthys spilopterus Gunther Bay Whiff - Adults		Broadly euryhaline; to brackish areas; widespread (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Topp and Hoff, Jr. 1972)	Abundant, mainly late summer, early fall (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Conner Unpubl.)	None
Bay Whiff - Young		Mainly in moderate to high salinity areas; widespread	Locally abundant; summer and fall (Conner Unpubl.)	None
Etropus crossotus Jordan and Gilbert Fringed Flounder		Mainly in moderate to high salinity areas; widespread (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938)	Moderately abundant, mainly late summer and fall (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Conner Unpubl.)	None

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Appendix 6.3(36). Continued.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
Paralichthys albigutta Jordan and Gilbert Gulf Flounder	See Nearshore Gulf entry (Appendix 6.3(30))	Mainly in high salinity areas (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938)	Sparse; occasionally taken by trawls, hook and line (Conner Unpubl.)	Minor value as
Paralichthys lethostigma Jordan and Gilbert Southern Flounder				
FAMILY SOLEIDAE SOLES				
Achirus lineatus (Linnaeus) Lined Sole	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline, but mainly in high to moderate salinity; widespread (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Moderately abundant, late summer, fall (Conner Unpubl.)	None
Trinectes maculatus (Bloch and Schneider) Hogchoker - Adults	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline; to fresh water, but mainly in brackish to high salinity; widespread (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Topp and Hoff, Jr. 1972) (Conner Unpubl.)	Abundant, mainly spring and summer (Norden 1966) (Conner Unpubl.)	None
Hogchoker - Young		Broadly euryhaline; to freshwater; widespread (Gunter 1945) (Gunter 1938) (Norden 1966) (Conner Unpubl.)	Abundant, spring (Conner Unpubl.)	None
FAMILY CYNOBLOSSIDAE TONGUEFISHES				
Symphurus plagiusa (Linnaeus) Blackcheek Tonguefish	See Nearshore Gulf entry (Appendix 6.3(30))	Broadly euryhaline, but mainly in high to moderate salinity; widespread (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Conner Unpubl.)	Abundant, mainly in spring (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Conner Unpubl.)	None

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Appendix 6.3(36). Concluded.

	Trophic Relations	Local Distribution	Relative and Seasonal Abundance	Economic Importance
FAMILY BALISTIDAE TRIGGERFISHES AND FILLEFISHES				
Monacanthus hispidus (Linnaeus) Planehead Filefish		Mainly high salinity; near tidal pass (Berry and Vogele 1961) (Conner Unpubl.)	Very rare (Conner Unpub.)	None
FAMILY TETRAODONTIDAE PUFFERS				
Sphoeroides parvus Shipp and Yerger Least Puffer		Mainly in moderate to high salinities; widespread (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Gunter 1945) (Gunter 1938) (Shipp 1974) (Conner Unpubl.)	Abundant, except during winter (Tarbox 1974) (Perret, Barret, Latapie, Pollard, Mock, Adkins, Gaidry, and White 1971) (Conner Unpubl.)	None

Appendix 6.3(37). Dune stabilization practices.

Vegetation stabilizes dunes both internally by means of an extensive root system and externally by covering the surface material and trapping new material. Few plant species are able to survive in the harsh beach environment. To be successful, the species must be adaptable to abrasive and accumulating sand, exposure to full sunlight, high surface temperature, occasional inundation by salt water, salt spray, and drought. The plants that do survive are long-lived rhizomatous or stoloniferous perennials with extensive root systems, stems capable of rapid upward growth through accumulating sand, and tolerance of salt spray (Coastal Engineering Research Center 1973). In the Chenier Plain the panic beach grasses (*Panicum amarum*) and marsh grasses such as saltmeadow cordgrass and salt grass commonly invade the dunes.

Beach and dune management with vegetation is common in areas with significant dune structure. It can be divided into two parts: (1) stabilization and maintenance of naturally occurring dunes and (2) creation and stabilization of protective dunes where they are presently non-existent. The creation of stabilized dunes by vegetation is preferable to using mechanical structures.

Transplanting techniques are well developed and recomended for areas adjacent to the beach berm and for critical areas--sites subject to erosion (Coastal Engineering Research Center 1973). The vulnerability of a site to erosion determines the transplant spacing and culm number. The more vulnerable the area, the greater the number of culms per transplant and the closer the spacing required to insure successful stabilization. If a dense first year growth is desired, the transplant spacing should be less than 18 inches. Transplants on flat to moderate slopes may be accomplished by mechanical transplanters on a tractor, while steeper or irregular slopes must be planted by hand.

Plant spacing and sand movement must be considered in determining the overall dune morphology. If the plant spacing is dense and there is only a small amount of sand moved for trapping, the bulk of the sand will be contained along the seaward edge of the dune and a narrow-based dune is formed. If the plant spacing along the seaward edge is less dense given similar conditions of sand movement, the result will be a wider based dune. However, it should be recognized that the effectiveness of less dense plant spacing along the seaward edge of the dune is limited by the rate of plant growth. An additional factor is wind direction. In the case of onshore winds, the seaward edge of the dune traps nearly all of the beach sand. Offshore winds blowing over unvegetated areas landward of the dunes result in materials being trapped at the landward edge of the dune. The annual trapping capacity of panic grasses and sea oats is between 1 and 3 yd^3 per linear foot of beach, possibly exceeding this rate in some cases. It is

suggested (Coastal Engineering Research Center 1973) that dune growth in most areas is limited by the amount of sand transported off the beach by wind and waves rather than by the trapping capacity of the vegetation. Nonetheless, the vegetation is necessary to stabilize and maintain the dune.

Seeding is practical only when protection from drying and eroding winds can be provided by mulching or frequent irrigation, and is therefore not applicable to most beach areas (Coastal Engineering Research Center 1973). Beach grass seeds are not available from commercial sources and must be harvested from wild plants. Additions of nutrients to beach sands for plant establishment and maximum growth is essential (Gulf University Research Consortium 1972).

Loss of vegetation is due to overgrazing, man's destructive influence (e.g., dune buggies, construction), fire and storm surges. Successful dune construction appears to require total grazing restriction. Pathways to get to beaches trample vegetation. The loss of vegetation for whatever reason causes "blowouts", areas which have succumbed to the erosive effects of marine influences. Dunes are a low cost method of shore protection--their existence largely depends on the stabilizing and maintenance functions of vegetation.

Appendix 6.3(38). Representative vertebrates of the Beach Habitat in the Chenier Plain.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
AMPHIBIANS			
Bufo valliceps Gulf coast toad			
Bufo woodhousei Woodhouse's toad			
REPTILES			
Chemidophorus sexlineatus Six-lined racerunner			
BIRDS			
Pelecanus erythrorhynchus American white pelican	fish (Bent 1922)	Sept.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Ardea herodias Great blue heron	mostly fish; also crustaceans, insects, frogs, lizards, snakes, birds, small mammals (Bent 1926)	Year-round (Lowery 1974a)	
Florida caerulea Little blue heron	crayfish, small crabs, insects, fish, frogs, lizards (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Dichromanassa rufescens Reddish egret		Mar.-Oct. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Casmerodius albus Great egret	small fish, snails, fiddlers, insects, frogs, lizards, small snakes, mice, some plant material (Bent 1926)	Mar.-Nov. (Lowery 1974a)	
Egretta thula Snowy egret	shrimp, small fish, fiddlers, snails, insects, crayfish, small lizards, small frogs, small snakes (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Hydranassa tricolor Louisiana heron	slugs, snails, crayfish, insects, small fish, lizards, frogs (Bent 1926)	Mar.-Nov. (Lowery 1974a)	

continued

Appendix 6.3(38). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Nycticorax nycticorax Black-crowned night heron	mostly fish (alive or dead), worms, crustaceans, insects (Bent 1926)	Mar.-Sept. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Nyctanassa violacea Yellow-crowned night heron	snails, crayfish, crabs, fish, small reptiles, small mammals and birds (Bent 1926)	Mar.-Sept. (Lowery 1974a)	
Accipiter striatus Sharp-shinned hawk	small birds, small mammals, frogs, lizards, insects (Bnet 1937)	Sept.-Apr. (Lowery 1974a)	
Iridoprocne bicolor Tree swallow	81% animal: insects and spiders 21% plant: seeds and berries (Bent 1942)	Sept.-May (Lowery 1974a)	
Riparia riparia Bank swallow	insects (Bent 1942)	Apr.-May; Jul.-Oct. (Lowery 1974a)	
Hirundo rustica Barn swallow	99% animal: insects; some spiders and snails (Bent 1942)	Mar.-May; Aug.-Nov. (Lowery 1974a)	
Petrochelidon pyrrhonota Cliff swallow	99% animal: insects (Bent 1942)	Apr.-Jun. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Progne subis Purple martin	mostly insects, some spiders (Bent 1942)	Feb.-Aug.; nesting Apr.-Jun. (Lowery 1974a)	
Corvus ossifragus Fish crow	carrion, crustaceans, fish, bird eggs, insects, berries, tree fruits, seeds, some grain (Bent 1946)	Year-round (Lowery 1974a)	
Anthus spinoletta Water pipit		Nov.-Mar. (Lowery 1974a)	
Quiscalus mexicanus Great-tailed grackle	worms, insects, crustaceans, small fish, tadpoles, small lizards, eggs and young of birds, fruit, grain (Bent 1958)	Mar.-Aug. (Lowery 1974a)	
Quiscalus major Boat-tailed grackle	insects, tadpoles, frogs, small fish, spiders (Bent 1958)	Year-round (Lowery 1974a)	
Passerculus sandwichensis Savannah sparrow	8% animal: mostly insects; 92% plant: seeds (winter) (Bent 1968)	Oct.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(38). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Pandion hallaetus Osprey	bowfin, carp, catfish, eel, flounder, goldfish, menhaden, mullet, pickerel, shad, sunfish. No carrion (Bent 1937)	Sept.-Dec.; Feb.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Falco peregrinus Peregrine falcon	primarily birds; also mammals, insects (Bent 1937)	Sept.-May (Lowery 1974a)	Endangered
Falco columbarius Merlin	mostly birds: green-winged teal, shorebirds, small chickens, various songbirds; also insects, spiders, reptiles, mice, pocket gophers, squirrels, bats (Bent 1937)	Sept.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Himantopus mexicanus Black-necked stilt	99% animal: mostly insects; also crayfish, snails, tiny fish. 1% plant: seeds of aquatic and marsh plants (Bent 1927)	Mar.-Oct. (Lowery 1974a)	
Recurvirostra americana American avocet	65% animal: insects. 35% plant: seeds of aquatic and marsh plants (Bent 1927)	Sept.-May (Lowery 1974a)	
Charadrius semipalmatus Semipalmated plover	worms, small mollusks, crustaceans, insects (Bent 1929)	Mar.-May; Jul.-Nov. (Lowery 1974a)	
Charadrius wilsonia Wilson's plover	crustaceans, mollusks, insects, worms (Bent 1929)	Mar.-Sept. (Lowery 1974a)	
Charadrius vociferus Killdeer	98% insects and other animal matter (e.g., snails, crabs, crayfish); 2% plant: weed and grass seeds (Bent 1929)	Sept.-May (Lowery 1974a)	
Charadrius melodus Piping plover	marine worms, insects, mollusks, eggs of marine animals (Bent 1929)	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Charadrius alexandrinus Snowy plover	marine worms, small crustaceans, other small animals (Bent 1929)	Mar.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Pluvialis dominica American golden plover	almost entirely insects; also small mollusks and	Mar.-May (Lowery 1974a)	

continued

Appendix 6.3(38). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Pluvialis squatarola Black-bellied plover	marine worms, small mollusks, crustaceans, insects, some plant material (Bent 1929)	Sept.-May (Lowery 1974a)	
Limosa fedoa Marbled godwit	insects, mollusks (Bent 1927)	Oct.-Nov. (Lowery 1974a)	
Numenius americanus Long-billed curlew	worms, crustaceans, snails, insects, toads (Bent 1929)	Mar.-May; Sept.-Nov. (Lowery 1974a)	
Tringa melanoleuca Greater yellowlegs	small fish, occasionally insects (Bent 1927)	Feb.-May; Aug.-Nov. (Lowery 1974a)	
Tringa flavipes Lesser yellowlegs	mostly insects; also small crustaceans, small fish, worms (Bent 1927)	Feb.-May; Aug.-Nov. (Lowery 1974a)	
Caroptropherus semipalmatus Willet	worms, insects, small crabs, small mollusks, small fish, grasses, tender roots, seeds, rice (Bent 1929)	Year-round (Lowery 1974a)	
Arenaria interpres Ruddy turnstone	small crustaceans, small mollusks, insects (Bent 1929)	Mar.-May, Aug.-Oct. (Lowery 1974a)	
Limnodromus griseus Short-billed dowitcher	worms, insects, fish eggs, small mollusks, seeds and roots of aquatic plants (Bent 1927)	Mar.-May; Sept.-Nov. (Lowery 1974a)	
Calidris canutus Red knot	small mollusks and crustaceans, marine worms, grasshoppers (Bent 1927)	Mar.-Jun.; Jul.-Nov. (Lowery 1974a)	
Calidris alba Sanderling	sand fleas, shrimp and other small crustaceans, small mollusks, worms, insects, some seeds (Bent 1927)	Aug.-May (Lowery 1974a)	
Calidris pusilla Semipalmated sandpiper	small mollusks, worms, insects, traces of plant material (Bent 1927)	Apr.-May; Sept.-Nov. (Lowery 1974a)	
Calidris mauri Western sandpiper	insects, marine worms, small snails (Bent 1927)	Aug.-May (Lowery 1974a)	

continued

Appendix 6.3(38). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Calidris minutilla Least sandpiper	mostly insects; also small crustaceans, worms (Bent 1927)	Aug.-Apr. (Lowery 1974a)	
Calidris fuscicollis White-rumped sandpiper	78% animal: snails, marine worms; 22% plant: seeds (Bent 1927)	Apr.-Jun (Lowery 1974a)	
Calidris bairdii Baird's sandpiper	insects, amphipods, algae (Bent 1927)	Mar.-May; Jul.-Oct. (Lowery 1974a)	
Calidris melanotos Pectoral sandpiper	insects (66%); amphipods (22.3%); algae (10.5%); also other animals, seeds (Bent 1927)	Mar.-May; Aug.-Oct. (Lowery 1974a)	
Calidris alpina Dunlin	small mollusks, small crustaceans, insects, marine worms, occasionally seeds (Bent 1927)	Oct.-May (Lowery 1974a)	
Larus argentatus Herring gull	dead fish and other detritus; live fish, crustaceans, mollusks, echinoderms, worms, insects (Bent 1921)	Nov.-Apr. (Lowery 1974a)	
Larus delawarensis Ring-billed gull	refuse, insects (Bent 1921)	Oct.-Apr. (Lowery 1974a)	
Larus atricilla Laughing gull	mostly small fish; also eggs of other seabirds, refuse (Bent 1921)	Year-round (Lowery 1974a)	
Larus philadelphia Bonaparte's gull	small fish, crustaceans, marine worms, insects (Bent 1921)	Oct.-Apr. (Lowery 1974a)	
Sterna forsteri Forster's tern	insects, floating carrion (Bent 1921)	Year-round (Lowery 1974a)	
Sterna hirundo Common tern	almost wholly small fish; also shrimp and aquatic insects (Bent 1921)	Sept.-May (Lowery 1974a)	
Sterna albifrons Least tern	small fish; some crustaceans and insects (Bent 1921)	Apr.-Aug. (Lowery 1974a)	
Sterna maxima Royal tern	almost wholly small fish; also crabs, shrimp (Bent 1921)	Year-round (Lowery 1974a)	

continued

Appendix 6.3(38). Concluded.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Sterna sandvicensis Sandwich tern	almost wholly small fish; also shrimp, squid (Bent 1921)	Apr.-Aug. (Lowery 1974a)	
Sterna caspia Caspian tern	almost wholly small fish; also shrimp and other surface-swimming aquatic life (Bent 1921)	Year-round (Lowery 1974a)	
Chlidonias niger Black tern	small fish, insects (Bent 1921)	Apr.-Sept. (Lowery 1974a) (non-breeding)	
Rynchops niger Black skimmer	small fish; small crustaceans (Bent 1921)	Year-round (Lowery 1974a)	
Athene cunicularia Burrowing owl	insects, small mammals, birds, lizards, snakes, amphibians, fish, myriapods, crayfish (Bent 1937)	Oct.-Mar. (Lowery 1974a)	
Asio flammeus Short-eared owl	mostly small mammals, also small birds, insects (Bent 1937)	Oct.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1975)
Chordeiles minor Common nighthawk	insects, mostly flying (Bent 1940)	Apr.-Oct. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1975)
MAMMALS			
Dedelphis virginiana Virginia opossum	insects, birds, carrion, plant material (Lowery 1974b)	Breeds in Jan.-Feb. (Lowery 1974b)	
Dasypus novemcinctus Nine-banded armadillo	insects, plant material (Lowery 1974b)	Breeds in Jul.-Aug. (Lowery 1974b)	
Procyon lotor Northern raccoon	animals and plant material (Lowery 1974b)	Breeds Dec.-Jan. (Lowery 1974b)	

Appendix 6.3(39). Plant species dominant on spoil banks in Rockefeller Wildlife Refuge in the Chenier Plain (Spindler and Noble 1974).

Species	% of vegetative cover	average % ground cover	frequency (%)
Spartina patens	36.0	29.0	73.0
Baccharis halimifolia	34.5	27.7	81.1
Phragmites communis	4.4	3.2	8.5
Eupatorium serotinum	3.0	2.5	22.6
Vigna luteola	3.0	2.4	61.1
Kosteletzkya virginica	1.9	1.5	24.4
Scirpus robustus	1.4	1.2	20.0
Rivina humilis	1.3	1.0	7.4
Phytolacca americana	1.2	1.0	11.5
Ipomoea sagittata	1.2	1.0	17.4
Mikania scandens	1.1	0.9	9.3
Verbena bonariensis	0.9	0.7	5.6
Eupatorium capillifolium	0.8	0.7	6.3
Panicum hemitomon	0.7	0.6	5.2
Iva frutescens	0.7	0.5	5.6
Chenopodium ambrosioides	0.6	0.5	5.2
Alternanthera philoxeroides	0.6	0.5	7.0
Daubentonia texana	0.5	0.4	3.3
Andropogon virginicus	0.5	0.4	4.1
Polygonum punctatum	0.4	0.4	4.1
Eclipta alba	0.4	0.3	5.9
Spartina cynosuroides	0.4	0.3	3.0
Ambrosia artemisiifolia	0.4	0.3	3.0
Distichlis spicata	0.4	0.3	5.2
Cyperus odoratus	0.4	0.3	4.0
Eichhornia crassipes	0.3	0.3	3.7
Unknown	0.3	0.2	4.5
Solidago sp.	0.3	0.2	2.6
Pluchea purpurascens	0.3	0.2	4.4
Cucumis melo	0.3	0.2	3.0
Cyperus sp.	0.2	0.2	3.3
Echinochloa crusgalli	0.2	0.1	1.5
Bacopa monnieri	0.2	0.1	2.6
Sesbania exaltata	0.1	0.1	1.1
Euphorbia supina	0.1	0.1	1.9
Rumex chrysocarpus	0.1	0.1	1.9
Echinochloa walteri	0.1	0.1	1.9
Melothria pendula	0.1	0.1	1.5
Oxalis sp.	0.1	0.1	1.5
Setaria magna	0.1	0.1	1.1
Senecio glabellus	<0.05	<0.05	0.7
Erigeron bonariensis	<0.05	<0.05	0.7
Acnida cuspidata	<0.05	<0.05	0.7
Lippia nodiflora	<0.05	<0.05	0.7
Ophioglossum petiolatum	<0.05	<0.05	0.7
Physalis angulata	<0.05	<0.05	0.7
Paspalum distichum	<0.05	<0.05	0.7
Ceratophyllum demersum	<0.05	<0.05	0.7
Cyperus erythrorhizos	<0.05	<0.05	0.7
Heliotropium curassavicum	<0.05	<0.05	1.1
Erechtites hieracifolia	<0.05	<0.05	0.4
Scirpus californicus	<0.05	<0.05	0.4
Ammannia coccinea	<0.05	<0.05	0.4
Cuscuta cuspidata	<0.05	<0.05	0.4
Carduus sp.	<0.05	<0.05	0.4
Stachys sp.	<0.05	<0.05	0.4
LEMNACEAE	<0.05	<0.05	0.4
Iris sp.	<0.05	<0.05	0.4
Scirpus americanus	<0.05	<0.05	0.4
Potamogeton sp.	<0.05	<0.05	0.4
Solidago tenuifolia	<0.05	<0.05	0.4
Ludwigia leptocarpa	<0.05	<0.05	0.4
Setaria geniculata	<0.05	<0.05	0.4

Total % of ground covered by vegetation = 80.5%

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Appendix 6.3(40). Representative vertebrates of the Ridge (Chenier, Levee, and Spoil Bank) Habitat in the Chenier Plain.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
AMPHIBIANS			
Ambystoma opacum Marbled salamander			
Notopthalmus viridescens Central newt			
Scaphiopus holbrooki Hurter's spadefoot toad			
Bufo valliceps Gulf coast toad			
Bufo woodhousei Woodhouse's toad			
Hyla crucifer Spring peeper			
Hyla cinerea Green tree frog	insects (Wright and Wright 1949)		
Hyla squirella Squirrel tree frog			
Hyla versicolor & *H. chrysocelis* Gray tree frog			
Pseudacris streckeri Upland chorus frog			
Rana clamitans Bronze frog			
Rana sphenocephala Southern leopard frog			
Gastrophryne carolinensis Eastern narrow-mouthed toad			

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
REPTILES			
Kinosternon subrubrum Mississippi mud turtle	insects, small snails (Carr 1952)		
Terrapene carolina Three-toed box turtle	omnivorous in captivity (Carr 1952)		
Terrapene ornata Ornate box turtle	insects and other small animals (Carr 1952)		
Anolis carolinensis Green anole	insects, spiders (Smith 1946)		
Onemidophorus sexlineatus Six-lined racerunner	mostly insects; some other arthropods, snails (Smith 1946)		
Eumeces fasciatus Five-lined skink	earthworms, spiders, insects, some young lizards and mice (Smith 1946)		
Eumeces laticeps Broad-headed skink	ins (Smith 1946)		
Leiolopisma laterale Ground skink	small insects, spiders, millepedes, pillbugs, sowbugs (Smith 1946)		
Ophisaurus attenuatus Slender glass lizard	insects, spiders, other arthropods, snails (Smith 1946)		
Coluber constrictor Racer	insects, frogs, snakes, young birds (Wright and Wright 1957)	Breeds: May Hatch: Jul.-Sept. (Wright and Wright 1957)	
Elaphe guttata Corn snake			
Elaphe obsoleta Texas rat snake	mice lizards, birds and their eggs, tree frogs (Wright and Wright 1957)		
Heterodon platyrhinos Eastern hognose snake	worms, insects, fish, amphibians, reptiles, birds, mammals (Wright and Wright 1957)		

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Lampropeltis calligaster Prairie kingsnake	fish, amphibians, reptiles, small mammals (Wright and Wright 1957)		
Lampropeltis doliata Louisiana milk snake	lizards, small snakes (Wright and Wright 1957)		
Lampropeltis petulus Speckled king snake	other snakes, small birds, lizards, mice, rats (Wright and Wright 1957)		
Natrix cyclopion Green water snake	Gambusia (77.6%); other fish (18.6%); tadpoles (3.5%) (Mushinsky and Hebrard 1976)	Mar.-Oct. (Mushinsky and Hebrard, unpublished manuscript)	
Nerodia fasciata confluens Broad-banded water snake	fish (8.69%); frogs and toads (6.4%); tadpoles (4.8%) (Mushinsky and Hebrard 1976)	Mar.-Sept. (Mushinsky and Hebrard, unpublished manuscript)	
Nerodia fasciata clarki Gulf salt marsh snake			
Nerodia erythrogaster Yellow-bellied water snake	fish (65.3%); frogs and toads (27.0%); tadpoles (7.5%) (Mushinsky and Hebrard 1976)	Apr.-Aug. (Mushinsky and Hebrard, unpublished manuscript)	
Nerodia rhombifera Diamondback water snake	fish (92.7%); frogs and toads (1.0%); tadpoles (6.1%) (Mushinsky and Hebrard 1976)	Mar.-Oct. (Mushinsky and Hebrard, unpublished manuscript)	
Opheodrys aestivus Rough green snake	insects, spiders, snails, frogs, fish (Wright and Wright 1957)		
Regina grahamii Graham's crayfish snake	crayfish (100%) (Mushinsky and Hebrard 1976)	Mar.-Sept. (Mushinsky and Hebrard, unpublished manuscript)	
Regina rigida Glossy crayfish snake	Siren, fish, crayfish (Wright and Wright 1957)		
Storeria dekayi Brown snake	earthworms, snails, insects, small frogs, fish (Wright and Wright 1957)		
Thamnophis proximus Western ribbon snake	insects, fish, frogs, salamanders, mice, toads (Wright and Wright 1957)		

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Thamnophis sirtalis Garter snake	earthworms, mollusks, insects, fish, salamanders, toads, frogs, small mammals, small birds (Wright and Wright 1957)		
Virginia striatula Rough earth snake	earthworms, mollusks, insects, sowbugs, small anurans, small lizards (Wright and Wright 1957)		
Micrurus fulvius Eastern coral snake	lizards, small snakes (Wright and Wright 1957)		
Agkistrodon contortrix Southern copperhead	frogs, small rodents, small birds (Wright and Wright 1957)		
Agkistrodon piscivorus Cottonmouth	fish, salamanders, frogs, reptiles, birds, mammals (Wright and Wright 1957)		
Sistrurus miliarius Pygmy rattlesnake	mice, insects (Wright and Wright 1957)		
BIRDS			
Phalacrocorax auritus Double-crested cormorant	mostly fish; rarely crustaceans, mollusks, eel grass (Bent 1922)	Sept.-Apr.	"Blue List" Nat. Aud. Soc. (1976)
Phalacrocorax olivaceus Olivaceous cormorant		Year-round	
Anhinga anhinga Anhinga	fish, leeches, shrimp, crayfish, insects, salamanders, frogs, young turtles and alligators, snakes (Bent 1922)	Mar.-Oct. (Lowery 1974a)	
Ardea herodias Great blue heron	mostly fish; also crustaceans, insects, frogs, lizards, snakes, birds, small mammals (Bent 1926)	Year-round (Lowery 1974a)	
Butorides striatus Green heron	small fish, earthworms, insects, tadpoles, frogs, snakes, small mammals (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Florida caerulea Little blue heron	crayfish, small crabs, insects, fish, frogs, lizards (Bent 1926)	Mar.-Oct. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Bubulcus ibis Cattle egret	insects (Lowery 1974a)	Year-round (Lowery 1974a)	Invaded La. in 1955
Casmerodius albus Great egret	small fish, snails, fiddlers, insects, frogs, lizards, small snakes, mice, some plant material (Bent 1926)	Mar.-Nov. (Lowery 1974a)	
Egretta thula Snowy egret	shrimp, small fish, fiddlers, snails, insects, crayfish, small lizards, small frogs, small snakes (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Hydranassa tricolor Louisiana heron	slugs, snails, crayfish, insects, small fish, lizards, frogs (Bent 1926)	Mar.-Nov. (Lowery 1974a)	
Nycticorax nycticorax Black-crowned night heron	mostly fish (alive or dead), worms, crustaceans, insects (Bent 1926)	Mar.-Sept. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Nyctanassa violacea Yellow-crowned night heron	snails, crayfish, crabs, fish, small reptiles, small mammals and birds (Bent 1926)	Mar.-Sept. (Lowery 1974a)	
Mycteria americana Wood stork	fish, aquatic reptiles, insects (Bent 1926)	Jun-Sept. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Plegadis falcinellus Glossy ibis	insects, crayfish, young snakes (Bent 1926)	Year-round (Lowery 1974a)	
Plegadis chichi White-faced ibis	earthworms, crayfish, mollusks, crayfish, insects, small fish and frogs, newts, leeches (Bent 1926)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Eudocimus albus White ibis	mostly crayfish; also other crustaceans, slugs, snails, small snakes, insects (Bent 1926)	Mar.-Sept. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Ajaia ajaja Roseate spoonbill	fish, shrimp, insects (Bent 1926)	Year-round (Lowery 1974a)	
Aix sponsa Wood duck	90% plant: aquatic plants, cypress cones and galls, seeds, duckweed; 10% animal: mostly insects (Bent 1923)	Year-round (Lowery 1974a)	
Cathartes aura Turkey vulture	carrion (Bent 1937)	Year-round (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Coragyps atratus Black vulture	chiefly carrion, also young herons in rookeries (Bent 1937)	Year-round (Lowery 1974a)	
Elanoides forficatus Swallow-tailed kite	snails, insects, frogs, snakes (Lowery 1974a)	Mar.-Aug. (Lowery 1974a)	
Ictinia mississippiensis Mississippi kite	mostly insects, some small frogs, lizards, snakes (Lowery 1974a)	Apr.-Oct. (Lowery 1974a)	
Accipter striatus Sharp-shinned hawk	small birds, small mammals, lizards, frogs, insects (Bent 1937)	Sept.-Apr. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Accipter cooperi Cooper's hawk	teal, snipe, screech owl, quail, doves, hawks, flickers, passerines; rabbits, opossum, skunks, rodents, reptiles, frogs, insects (Bent 1937)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Buteo jamaicensis Red-tailed hawk	almost wholly small rodents (Lowery 1974a)	Oct.-Mar. (Lowery 1974a)	
Buteo lineatus Red-shouldered hawk	earthworms, snails, amphibians, reptiles, birds, mammals (Bent 1937)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Buteo platypterus Broad-winged hawk	earthworms, insects, crayfish, anurans, reptiles, birds, mammals (Bent 1937)	Apr.-Sept. (Lowery 1974a)	
Buteo swainsoni Swainson's hawk	mostly small mammals and insects (Bent 1937)	Accidental (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Pandion haliaetus Osprey	bowfin, carps, catfish, eel, flounder, goldfish,	Sept.-Dec.; Feb.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Caracara cheriway Audobon's caracara	mostly carrion; also worms, insects, crustaceans, fish, amphibians, reptiles, small mammals (Bent 1937)	Year-round at Gum Cove, Cameron Par. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Falco peregrinus Peregrine falcon	primarily birds; also mammals, insects (Bent 1937)	Sept.-May (Lowery 1974a)	Endangered
Falco columbarius Merlin	mostly birds: green-winged teal, shorebirds, small chickens, various songbirds; also insects, spiders, reptiles, mice, pocket gophers, squirrels, bats (Bent 1937)	Sept.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Falco sparverius American kestrel	insects, amphibians, reptiles, birds, mammals (Bent 1937)	Sept.-Apr. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Colinus virginianus Bobwhite	84% plant: seeds, fruit, leaves, buds, tubers; 16% animal: mollusks, crustaceans, spiders, insects, frogs (Bent 1932)	Year-round (Lowery 1974a)	
Francolinus francolinus Black francolin	62% animal: mollusks, insects, spiders; 38% plant: tubers, legume seeds, green leaves	Year-round (Lowery 1974a)	Introduced at Gum Cove, Cameron Par. (Lowery 1974)
Charadrius wilsonia Wilson's plover	crustaceans, mollusks, insects, worms (Bent 1929)	Mar.-Sept. (Lowery 1974a)	
Charadrius vociferus Killdeer	98% insects and other animal matter (e.g., snails, crabs, crayfish); 2% plant: weed and grass seeds (Bent 1929)	Sept.-May (Lowery 1974a)	
Philohela minor American woodcock	earthworms, grubs, slugs, insects and their larvae (Bent 1927)	Oct.-Feb. (Lowery 1974a)	
Zenaida macroura Mourning dove	seeds (Bent 1932)	Year-round (Lowery 1974a)	
Columbina passerina Common ground dove	small seeds, berries, insects (Bent 1932)	Oct.-May (Lowery 1974a)	
Coccyzus americanus Yellow-billed cuckoo	mostly caterpillars-also other insects, wild berries, frogs, lizards (Bent 1940)	Apr.-Oct. (Lowery 1974a)	
Coccyzus erythophthalmus Black-billed cuckoo	similar to above; also small mollusks, fish, aquatic larvae, fruits and berries, bird eggs and young (Bent 1940)	Apr.-May; Aug.-Oct. (Lowery 1974a)	
Crotophaga sulcirostris Groove-billed ani	mostly insects, also fruits and berries (Bent 1940)	Oct.-Apr. (Lowery 1974a)	
Tyto alba Barn owl	small mammals, birds, insects, frogs (Bent 1937)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Otus asio Common screech owl	worms, arthropods, snails, fish, amphibians, reptiles, birds, mammals (Bent 1937)	Year-round; nesting in Mar.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Catharus fuscescens Veery	60% animal: insects, spiders, sowbugs, snails; 40% plant: fruits and berries (Bent 1949)	Apr.-May (Lowery 1974a)	
Sialia sialis Eastern bluebird	68% animal: insects, spiders, myriapods; 32% plant: largely wild fruit (winter) (Bent 1949)	Year-round (Lowery 1974a)	
Polioptila caerulea Blue-gray gnatcatcher	insects, spiders (Bent 1949)	Mar.-Oct. (Lowery 1974a)	
Regulus satrapa Golden-crowned kinglet	almost wholly insects (Bent 1949)	Oct.-Mar. (Lowery 1974a)	
Regulus calendula Ruby-crowned kinglet	94% animal: insects, spiders, pseudoscorpions; 6% plant: fruit, berries, weed seeds (Bent 1949)	Oct.-Apr. (Lowery 1974a)	
Bombycilla cedorum Cedar waxwing	berries (Lowery 1974)	Nov.-Apr. (Lowery 1974a)	
Lanius ludovicianus Loggerhead shrike	68% insects, 28% small vertebrates, 4% spiders (Bent 1950)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Sturnus vulgaris European starling	57% animal: mostly insects, also worms, snails, spiders, millipedes, sowbugs, carrion; 43% plant: fruits, berries, grain, seeds (Bent 1950)	Year-round (Lowery 1974a)	Introduced
Vireo griseus White-eyed vireo	90% animal: insects, spiders; 10% plant: berries and fruits (Bent 1950)	Mar.-Oct. (Lowery 1974a)	
Vireo flavifrons Yellow-throated vireo	98% animal: mostly insects, some spiders; 2% plant: wild fruits and berries (Bent 1950)	Mar.-Sept. (Lowery 1974a)	
Vireo solitarius Solitary vireo	(January) 24% plant: wild fruits and berries; 76% animal: mostly insects (Bent 1950)	Oct.-Apr. (Lowery 1974a)	
Vireo olivaceus Red-eyed vireo	86% animal: almost wholly insects; 14% plant: wild fruits and berries (Bent 1950)	Apr.-Oct. (Lowery 1974a)	
Vireo philadelphicus Philadelphia vireo	93% animal: mostly insects, some spiders; 7% plant: wild fruits and berries (Bent 1950)	Aug.-Oct. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Bubo virginianus Great horned owl	mostly mammals; also birds, reptiles, amphibians, fish,	Year-round; nesting in Dec.-Jan. (Lowery 1974a)	
Strix varia Barred owl	mammals, birds, reptiles, amphibians, fish, crayfish, insects, spiders (Bent 1937)	Year-round; nesting in February (Lowery 1974a)	
Caprimulgus carolinensis Chuck-will's-widow	mostly insects; some small birds (Bent 1940)	Apr.-May; Aug.-Oct. (Lowery 1974a)	
Caprimulgus vociferus Whip-poor-will	entirely insects (Bent 1940)	Mar.-Apr. (Lowery 1974a)	
Chordeiles minor Common nighthawk	insects, mostly flying (Bent 1940)	Apr.-Oct. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Chaetura pelagica Chimney swift	flying insects (Bent 1940)	Mar.-Oct. (Lowery 1974a)	
Archilochus colubris Ruby-throated hummingbird	mostly insects, also nectar (Bent 1940)	Mar.-Oct. (Lowery 1974a)	
Megaceryle alcyon Belted kingfisher	almost wholly fish; also insects, crustaceans, mollusks, amphibians, small reptiles, birds, mice, berries (Bent 1940)	Sept.-Apr. (Lowery 1974a)	
Colaptes auratus Common flicker	61% animal: ants and other insects 39% plant: fruits and berries (Bent 1949)	Year-round (Lowery 1974a)	
Dryocopus pileatus Pileated woodpecker	73% animal: ants, beetles; 27% plant: wild fruits and berries (Bent 1939)	Year-round (Lowery 1974a)	
Melanerpes carolinus Red-bellied woodpecker	26% animal: ants and other insects, spiders, frogs 74% plant: grain, nuts, fruits, berries (Bent 1939)	Year-round (Lowery 1974a)	
Melanerpes erythrocephalus Red-headed woodpecker	50% animal: insects, spiders, myriapods 47% plant: fruits, berries, nuts (Bent 1939)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Sphyrapicus varius Yellow-bellied sapsucker	cambium, bast, sap, wild fruits; ants, beetles, wasps, other insects (Bent 1939)	Sept.-Mar. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Nutallornis borealis Olive-sided flycatcher	100% insects (Bent 1942)	Aug.-Sept. (Lowery 1974a)	
Pyrocephalus rubinus Vermilion flycatcher	insects (Bent 1942)	Sept.-Apr. (Lowery 1974a)	
Iridoprocne bicolor Tree swallow	81% animal: insects and spiders 21% plant: seeds and berries (Bent 1942)	Sept.-May (Lowery 1974a)	
Riparia riparia Bank swallow	insects (Bent 1942)	Apr.-May; Jul.-Oct. (Lowery 1974a)	
Stelgidopteryx ruficollis Rough-winged swallow	insects (Bent 1942)	Mar.-Nov.	
Hirundo rustica Barn swallow	99% animal: insects; some spiders and snails (Bent 1942)	Mar.-May; Aug.-Nov. (Lowery 1974a)	
Petrochelidon pyrrhonota Clif swallow	99% animal: insects (Bent 1942)	Apr.-Jun. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Progne subis Purple martin	mostly insects, some spiders (Bent 1942)	Feb.-Aug.; nesting Apr.-Jun. (Lowery 1974a)	
Cyanocitta cristata Blue jay	24% animal: insects, spiders, myriapods, small fish, amphibians, birds, mice; 76% plant: grain, berries, mast (Bent 1946)	Year-round (Lowery 1974a)	
Corvus brachyrhynchos Common crow	28% animal: insects, spiders, snails, crustaceans, amphibians, birds, mammals, carrion; 72% plant: grain, beans, fruit, berries (Bent 1946)	Year-round (Lowery 1974a)	
Corvus ossifragus Fish crow	carrion, crustaceans, fish, bird eggs, insects; berries, tree fruits, seeds, some grain (Bent 1946)	Year-round (Lowery 1974a)	
Parus carolinensis Carolina chickadee	72% animal: insects, spiders; 28% plant: seeds, berries (Bent 1946)	Year-round (Lowery 1974a)	
Parus bicolor Tufted titmouse	67% animal: insects, snails; 33% plant: fruit, berries, mast (Bent 1946)	Year-round (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Picoides villosus Hairy woodpecker	78% animal: insects, spiders, millipedes; 22% plant: fruit, berries, grain, cambium, mast (Bent 1939)	Year-round ((Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Picoides pubescens Downy woodpecker	76% animal: insects 24% plant: mostly wild fruit (Bent 1939)	Year-round (Lowery 1974a)	
Tyrannus tyrannus Eastern kingbird	mostly insects; also small fruits and berries (Bent 1942)	Mar.-Sept. (Lowery 1974a)	
Tyrannus verticalis Western kingbird	91% animal: insects; 9% plant: seeds (Bent 1942)	Mar.-May; Aug.-Nov. (Lowery 1974a)	
Muscivora forficata Scissor-tailed flycatcher	96% animal: insects; 4% plant: small fruits and berries, a few seeds (Bent 1942)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Myiarchus crinitus Great crested flycatcher	94% animal: insects, spiders; 6% plant: small wild fruits and berries (Bent 1942)	Apr.-Sept. (Lowery 1974a)	
Sayornis phoebe Eastern phoebe	89% animal: insects, arachnids, millipedes 11% plant: fruit, seeds (Bent 1942)	Oct.-Mar. (Lowery 1974a)	
Empidonax flaviventris Yellow-bellied flycatcher	97% animal: insects, spiders; 3% plant: small fruits, some seeds (Bent 1942)	Aug.-Oct. (Lowery 1974a)	
Empidonax virescens Acadian flycatcher	97% animal: insects, spiders, millipedes; 3% plant: fruits and berries (Bent 1942)	Apr.-Oct. (Lowery 1974a)	
Empidonax traillii Willow flycatcher	96% animal: insects, spiders, millipedes; 4% plant: fruits, berries, seeds (Bent 1942)	Aug.-Sept. (Lowery 1974a)	
Empidonax alnorum Alder flycatcher		Aug.-Sept. (Lowery 1974a)	
Empidonax minimus Least flycatcher	98% animal: insects, spiders; 2% plant: fruits, berries, seeds (Bent 1942)	Sept.-Oct. (Lowery 1974a)	
Contopus virens Eastern wood pewee	99% animal: insects, spiders, millipedes; 1% plant: berries (Bent 1942)	Mar.-Oct. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Certhia familiaris Brown creeper	mostly insects, also spiders, pseudoscorpions (Bent 1948)	Oct.-Mar. (Lowery 1974a)	
Troglodytes aedon Northern house wren	98% arthropods; 2% plant material (Bent 1948)	Sept.-Apr. (Lowery 1974a)	
Troglodytes troglodytes Winter wren	almost wholly insects and spiders (Bent 1948)	Oct.-Mar. (Lowery 1974a)	
Thryothorus ludovicianus Carolina wren	94% animal: insects, spiders, millipedes, sowbugs, snails, lizards, treefrogs, snakes; 6% plant: fruit, seeds, berries, mast (Ben. 1948)	Year-round (Lowery 1974a)	
Cistothorus platensis Sedge wren	insects, spiders (Bent 1948)	Oct.-Mar. (Lowery 1974a)	
Mimus ployglottos Northern mockingbird	48% animal: insects, spiders, crayfish, sowbugs, snails, lizards, small snakes; 52% plant: fruits and berries (Bent 1948)	Year-round (Lowery 1974a)	
Dumetella carolinensis Gray catbird	44% animal: insects, spiders; 56% plant: fruit and berries (Bent 1948)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Toxostoma rufum Brown thrasher	63% animal: worms, snails, crayfish, insects, amphibians, lizards; 37% plant: fruits, berries (Bent 1948)	Year-round (Lowery 1974a)	
Turdus migratorius American robin	40% animal: worms, mollusks, insects 60% plant: berries and fruits (Bent 1949)	Oct.-Mar. (Lowery 1974a)	
Hylocichla mustelina Wood thrush	62% animal: insects, spiders, earthworms 38% plant: berries (Bent 1949)	Mar.-Oct. (Lowery 1974a)	
Catharus guttata Hermit thrush	wild fruits and berries (winter) (Bent 1949)	Oct.-Mar. (Lowery 1974a)	
Catharus ustulata Swainson's thrush	64% animal: insects, spiders, millipedes, snails, sowbugs, worms; 36% plant: fruits, berries, seeds (Bent 1949)	Apr.-May (Lowery 1974a)	
Catharus minimus Gray-cheeked thrush	75% animal: insects, spiders, other animals; 25% sowbugs, worms; 36% plant: fruits, berries, seeds (Bent 1949)	Apr.-May (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Vireo gilvus Warbling vireo	mostly insects, some plant material (Bent 1950)	Apr.-Aug. (Lowery 1974a)	
Mniotilta varia Black-and-white warbler	almost entirely insects and spiders, trace of plant material (Bent 1953)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Vermivora chrysoptera Golden-winged warbler	insects, spiders (Bent 1953)	Apr.-May; Aug.-Sept. (Lowery 1974a)	
Vermivora pinus Blue-winged warbler	insects, spiders (Bent 1953)	Apr.-May; Aug.-Sept. (Lowery 1974a)	
Vermivora peregrina Tennessee warbler	insects, spiders, snails, trace of plant material (Bent 1953)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Vermivora celata Orange-crowned warbler	berries, fruits, insects (winter) (Bent 1953)	Nov.-Apr. (Lowery 1974a)	
Vermivora ruficapilla Nashville warbler	mostly insects (Bent 1953)	Mar.-May; Aug.-Oct. (Lowery 1974a)	
Parula americana Northern paurla warbler	insects, spiders (Bent 1953)	Mar.-Oct. (Lowery 1974a)	
Dendroica petechia Yellow warbler	almost wholly insects, also spiders, myriapods (Bent 1953)	Apr.-May; Jul-Sept. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Dendroica pensylvanica Chestnut-sided warbler	almost wholly insects; some seeds and berries (Bent 1953)	Apr.-May (Lowery 1974a)	
Dendroica caerulea Cerulean warbler	insects (Bent 1953)	Apr.-May; Aug.-Sept. (Lowery 1974a)	
Dendroica dominica Yellow-throated warbler	insects, spiders (Bent 1953)	Mar.-Aug. (Lowery 1974a)	
Dendroica virens Black-throated green warbler	insects, spiders (Bent 1953)	Apr.-May; Sept.-Nov. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Dendroica discolor Prairie warbler	100% insects, spiders (Bent 1953)	Mar.-Aug. (Lowery 1974a)	
Dendroica fusca Blackburnian warbler	mostly insects (Bent 1953)	Apr.-May (Lowery 1974a)	
Dendroica magnolia Magnolia warbler	almost wholly insects (Bent 1953)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Dendroica coronata Myrtle warbler	berries, seeds, insects (winter) (Bent 1953)	Oct.-Apr. (Lowery 1974a)	
Dendroica palmarum Palm warbler	mostly insects; some seeds and berries (Bent 1953)	Oct.-Apr. (Lowery 1974a)	
Dendroica striata Blackpoll warbler	almost wholly insects; some seeds and berries (Bent 1953)	Apr.-May (Lowery 1974a)	
Dendroica castanea Bay-breasted warbler	almost wholly insects; some fruit (Bent 1953)	Apr.-May (Lowery 1974a)	
Setophaga ruticilla American redstart	mostly insects (Bent 1953)	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	
Seiurus aurocapillus Oven bird	earthworms, mollusks, myriapods, spiders, insects, seeds, small fruit (Bent 1953)	Mar.-May; Aug.-Oct. (Lowery 1974a)	
Seiurus noveboracensis Northern waterthrush	almost wholly animal: small worms, minnows, crustaceans, mollusks, insects; a few seeds (Bent 1953)	Aug.-Oct. (Lowery 1974a)	
Seiurus motacilla Louisiana waterthrush	small mollusks, small fish, insects, some seeds (Bent 1953)	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	
Limnothlypis swainsoni Swainson's warbler	insects, spiders (Bent 1953)	Mar.-Sept. (Lowery 1974a)	
Helmintheros vermivorus Worm-eating warbler	insects, spiders (Bent 1953)	Apr.-May; Jul.-Aug. (Lowery 1974a)	
Protonotaria citrea Prothonotary warbler	insects, spiders, small mollusks (Bent 1953)	Mar.-Sept. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Geothlypis trichas Common yellowthroat	mostly insects, a few seeds (Bent 1953)	Mar.-Oct. (Lowery 1974a)	
Geothlypis formosa Kentucky warbler	insects, spiders, some berries (Bent 1953)	Apr.-Sept. (Lowery 1974a)	
Geothlpyis philadelphia Mourning warbler	beetles, spiders (Bent 1953)	Aug.-Oct. (Lowery 1974a)	
Wilsonia citrina Hooded warbler	insects (Bent 1953)	Mar.-Oct. (Lowery 1974a)	
Wilsonia pusilla Wilson's warbler	insects; occasionally fruit (Bent 1953)	Sept.-Oct. (Lowery 1974a)	
Wilsonia canadensis Canada warbler	insects, spiders (Bent 1953)	Sept. (Lowery 1974a)	
Icteria virens Yellow-breasted chat	insects, wild fruits and berries (Bent 1953)	Apr.-Sept. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Dolichonyx orizivorus Bobolink	57% animal: insects, spiders, myriapods; 43% plant: weed seeds, grain (Bent 1958)	May (Lowery 1974a)	
Agelaius phoeniceus Red-winged blackbird	73% plant: fruit, grain, weed seeds; 27% animal: mostly insects, some spiders and myriapods (Bent 1953)	Year-round (Lowery 1974a)	
Icterus spurius Orchard oriole	mostly insects, spiders; some berries, flowers (Bent 1958)	Mar.-Aug. (Lowery 1974a)	
Icterus galbula Baltimore oriole	1/3 caterpillars; also beetles, ants, parasitic wasps, bugs, grasshoppers, spiders, snails	Apr.-May; Aug.-Sept. (Lowery 1974a)	
Euphagus carolinus Rusty blackbird	53% animal: insects, spiders, myriapods, crustaceans, amphibians, snails, small fish: 47% plant: grain, seeds, fruit, mast (Bent 1958)	Nov.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Euphagus cyanocephalus Brewer's blackbird	32% animal: insects, spiders, sowbugs, snails, egg shells; 68% plant: berries, grain, weed seeds (Bent 1958)	Nov.-Mar. (Lowery 1974a)	
Quiscalus mexicanus Great-tailed grackle	worms, insects, crustaceans, small fish, tadpoles, small lizards, eggs and young of birds, fruit, grain (Bent 1958)	Mar.-Aug. (Lowery 1974a)	
Quiscalus major Boat-tailed grackle	insects, spiders, small fish, tadpoles (Bent 1958)	Year-round (Lowery 1974a)	
Quiscalus quiscula Common grackle	30% animal: insects, spiders, myriapods, crayfish, earthworms, sowbugs, reptiles, snails, fish, amphibians, birds, mice; 70% plant: grain (esp. corn), fruit, weed seeds, acorns (Bent 1958)	Year-round (Lowery 1974a)	
Molothrus ater Brown-headed cowbird	22% animal: insects; 78% plant: grain, weed seeds (Bent 1958)	Year-round (Lowery 1974a)	
Piranga olivacea Scarlet tanager	88% animal: insects; 12% plant: berries (Bent 1958)	Apr.-May (Lowery 1974a)	
Cardinalis cardinalis Northern cardinal	30% animal: almost wholly insects; also spiders, centipedes, snails, small bivalves; 70% plant: grain, seeds, wild fruits (Bent 1968)	Year-round (Lowery 1974a)	
Pheucticus ludovicianus Rose-breasted grosbeak	52% animal: mostly insects; 48% plant: wild fruits, seeds (Bent 1968)	Apr.-May (Lowery 1974a)	
Guiraca caerulea Blue grosbeak	68% insects; 32% plant: grain, seeds, fruits (Bent 1968)	Apr.-May; Jul.-Oct. (Lowery 1974a)	
Passerina cyanea Indigo bunting	insects, seeds, fruits, berries (Bent 1968)	Apr.-Oct. (Lowery 1974a)	
Passerina ciris Painted bunting	21% animal: mostly insects; also spiders, snails; 70% plant: seeds (Bent 1968)	Apr.-Oct. (Lowery 1974a)	
Spiza americana Dickcissel	70% animal: mostly insects: some spiders (Bent 1968)	Apr.-Jul. (Lowery 1974a)	
Carpodacus purpureus Purple finch	mostly seeds (winter) (Bent 1968)	Nov.-Feb. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Cardnelis tristis American goldfinch	seeds, berries, some insects (Bent 1968)	Nov.-Apr. (Lowery 1974a)	
Pipilo erythopthalmus Rufous-sided towhee	30% animal: insects, spiders, snails, millipedes, sowbugs, amphibians, reptiles; 70% plant: seeds, mast, fruit (Bent 1968)	Winter (Lowery 1974a)	
Passerculus sandwichensis Savannah sparrow	92% plant: seeds; 8% animal: mostly insects (winter) (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Poocetes gramineus Vesper sparrow	33% animal: mostly insects; 67% plant: seeds, grain (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Junco hyemalis Slate-colored junco	seeds; some insects (Bent 1968)	Oct.-Feb. (Lowery 1974a)	
Spizella passerina Chipping sparrow	38% animal: mostly insects, some spiders; 62% plant: mostly grass seeds (Bent 1968)	Winter (Lowery 1974a)	
Spizella pusilla Field sparrow	41% animal: mostly insects, some spiders; 59% plant: grass seeds (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Zonotrichia lengophrys White-crowned sparrow	primarily seeds; some fruits and berries (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Zonotrichia albicollis White-throated sparrow	mostly weed seeds, small fruits, some insects (Bent 1968)	Sept.-Apr. (Lowery 1974a)	
Melospiza lincolnii Lincoln's sparrow	42% animal: mostly insects; some spiders and millipedes; 58% plant: seeds; some grain (fall, winter, spring) (Bent 1968)	Apr.-May (Lowery 1974a)	
Melospiza georgiana Swamp sparrow	55% insects; 45% weed seeds (Bent 1968)	Sept.-May (Lowery 1974a)	
Melospiza melodia Song sparrow	34% insects; 66% plant: seeds, fruits, and berries (Bent 1968)	Oct.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
MAMMALS			
Didelphis virginiana Virginia opossum	insects, birds, carrion, plant material (Lowery 1974b)	Breeds in Jan.-Feb.(Lowery 1974a)	
Blarina brecivauda Short-tailed shrew	animals, plants (Lowery 1974b)	Active year-round (Lowery 1974b)	
Cryptotis parva Least shrew	animals	Breeds year-round (Lowery 1974b)	
Scalopus aquaticus Eastern mole			
Myotis austroriparius Southeastern myotis	insects (Lowery 1974b)	Active year-round in warm weather; mating in spring (Lowery 1974b)	
Lasiurus borealis Red bat	insects (Lowery 1974b)	Active year-round in warm weather; young born May-June (Lowery 1974b)	
Lasiurus seminolus Seminole bat	insects (Lowery 1974b)	Active year-round in warm weather; young born in June (Lowery 1974b)	
Lasiurus cinereus Hoary bat	insects		
Dasypus novemcinctus Nine-banded armadillo	insects, plant material (Lowery 1974b)	Breeds in Jul.-Aug. (Lowery 1974b)	
Sylvilagus floridanus Eastern cottontail	insects, plant material (Lowery 1974b)	Breeds Jul.-Aug. (Lowery 1974b)	0.38-0.39/acre (Murray 1970)
Sylvilagus aquaticus Swamp rabbit	green plants	Active year-round; breeds Jan.-Sept. (Lowery 1974b)	0.38-0.39/acre (Murray 1970)
Sciurus carolinensis Gray squirrel	plant material (Lowery 1974b)	Active year-round; breeds Dec.-Feb.; May-Aug. (Lowery 1974b)	
Sciurus niger Fox squirrel	plant material, insects (Lowery 1974b)	Active year-round; breeds Jan., May-June (Lowery 1974b)	

continued

Appendix 6.3(40). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Glaucomys volans Southern flying squirrel	plant material, birds (Lowery 1974b)	Active year-round; births in spring and fall (Lowery 1974b)	
Oryzomys palustris Marsh rice rat	plant material, insects, crustaceans, bird eggs and young (Lowery 1974b)	Breeds Mar.-Oct. (Lowery 1974b)	
Reithrodontomys humulis Eastern harvest mouse	almost wholly weed seeds; also grain, green vegetation (Lowery 1974b)	Active year-round, most births in Mar. and Nov. (Lowery 1974b)	
Reithrodontomys fulvescens Fulvous harvest mouse	weed seeds and green plant material (Lowery 1974b)	Active year-round (Lowery 1974b)	
Peromyscus gossypinus Cotton mouse	plant material (Lowery 1974b)	Active year-round; breeding lowest in summer (Lowery 1974b)	
Sigmodon hispidus Hispid cotton rat	plant material; bird eggs and young, insects, crayfish (Lowery 1974b)	Active and breeding year-round (Lowery 1974b)	
Neotoma floridana Eastern wood rat	plant material, snails, insects (Lowery 1974b)	Active year-round (Lowery 1974b)	
Ondatra zibethicus Common muskrat	plant material; aquatic animals (Lowery 1974b)	Active year-round; breeding peaks Nov. and Mar. (Lowery 1974b)	
Canis rufus Red wolf	nutria, swamp rabbit, cottontail, rice rat, cotton rat, muskrat (Riley and McBride 1972)	Breeds Jan.-Feb.; Births Mar.-Apr. (Riley and McBride 1972)	Endangered
Vulpes fulva Red fox	small mammals (Lowery 1974b)	Active year-round, breeds fall-winter (Lowery 1974b)	
Urocyon cinereoargenteus Gray fox	rats, mice, insects, berries, fruit, corn, mast (Lowery 1974b)	Active year-round; breeds late winter (Lowery 1974b)	
Euarctos americanus American black bear	acorns, berries, meat (Lowery 1974b)	"Hibernates" Nov.-Mar. (Lowery 1974b)	
Procyon lotor Northern raccoon	animals and plant material (Lowery 1974b)	Breeds Dec.-Jan. (Lowery 1974b)	

continued

Appendix 6.3(40). Concluded.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Mustela vison North american mink	crayfish, rodents, birds, fish, crabs, frogs (Lowery 1974b)	Active year-round births in early spring (Lowery 1974b)	
Spilogale putorius Spotted skunk	insects, crayfish, amphibians, small rodents, carrion, fruits (Lowery 1974b)	Breeds in winter, births in early spring (Lowery 1974b)	
Mephitis mephitis Striped skunk	insects, crayfish, amphibians, small rodents, small amounts of plant material (Lowery 1974b)	Active year-round (Lowery 1974b)	
Lutra canadensis Nearctic river otter	crabs, crayfish, fish, frogs, turtles, snakes (Lowery 1974b)	Breeds in late fall (Lowery 1974b)	
Lynx rufus Bobcat	rabbits, squirrels, small rodents, small birds, carrion (Lowery 1974b)	Mates mid-winter, birth in early spring (Lowery 1974b)	
Odocoileus virginianus White-tailed deer			

Appendix 6.3(41). Land birds likely to make regular trans-Gulf flights in spring (Hebrand unpubl., Lowery 1974a).

Coccyzus americanus
Yellow-billed cuckoo
Coccyzus erythopthalmus
Black-billed cuckoo
Caprimulgus carolinensis
Chuck-will's-widow
Chordeiles minor
Common nighthawk
Chaetura pelagica
Chimney swift
Archilochus colubris
Ruby-throated hummingbird
Tyrannus tyrannus
Eastern kingbird
Myiarchus crinitus
Great crested flycatcher
Empidonax flaviventris
Yellow-bellied flycatcher
Empidonax virescens
Acadian flycatcher
Empidonax traillii
Willow flycatcher
Empidonax alnorum
Alder flycatcher
Empidonax minimus
Least flycatcher
Contopus virens
Eastern wood pewee
Progne subis
Purple martin
Dumetella carolinensis
Gray catbird
Hylocichla mustelina
Wood thrush
Catharus ustulata
Swainson's thrush
Catharus minimus
Gray-cheeked thrush
Catharus fuscescens
Veery
Bombycilla cedorum
Cedar waxwing
Vireo griseus
White-eyed vireo
Vireo flavifrons
Yellow-throated vireo
Vireo olivaceus
Red-eyed vireo
Vireo philadelphicus
Philadelphia vireo
Vireo gilvus
Warbling vireo
Mniotilta varia
Black-and-white warbler
Vermivora chrysoptera
Golden-winged warbler
Vermivora pinus
Blue-winged warbler
Vermivora peregrina
Tennessee warbler
Vermivora ruficapilla
Nashville warbler
Parula americana
Northern parula warbler
Dendroica petechia
Yellow warbler
Dendroica pensylvanica
Chestnut-sided warbler
Dendroica cerulea
Cerulean warbler
Dendroica dominica
Yellow-throated warbler
Dendroica virens
Black-throated green warbler
Dendroica discolor
Prairie warbler
Dendroica fusca
Blackburnian warbler
Dendroica magnolia
Magnolia warbler
Dendroica coronata
Myrtle warbler
Dendroica striata
Blackpoll warbler
Dendroica castanea
Bay-breasted warbler
Setophaga ruticilla
American redstart
Seiurus aurocapillus
Ovenbird
Seiurus noveboracensis
Northern waterthrush
Seiurus motacilla
Louisiana waterthrush
Limnothlypis swainsoni
Swainson's warbler

continued

Appendix 6.3(41). Concluded.

Helmintheros vermivorus
Worm-eating warbler
Protontaria citrea
Prothonotary warbler
Geothlypis formosa
Kentucky warbler
Wilsonia citrina
Hooded warbler
Wilsonia pusilla
Wilson's warbler
Icteria virens
Yellow-breasted chat
Dolichonyx oryzivorus
Bobolink
Icterus spurius
Orchard oriole
Icterus galbula
Baltimore oriole
Piranga olivacea
Scarlet tanager
Piranga rubra
Summer tanager
Pheucticus ludovicianus
Rose-breasted grosbeak
Guiraca caerulea
Blue grosbeak
Passerina cyanea
Indigo bunting
Passerina ciris
Painted bunting
Spiza americana
Dickcissel

Appendix 6.3(42). Representative vertebrates of the Upland Forest Habitat in the Chenier Plain.

Species	Food	Abundance or Activity	Remarks
AMPHIBIANS			
Ambystoma opacum Marbled salamander			
Notopthalmus viridescens Central newt			
Scaphiopus holbrooki Hurter's spadefoot toad			
Bufo valliceps Gulf coast toad			
Bufo woodhousei Woodhouse's toad			
Acris crepitans Northern cricket frog			
Hyla crucifer Spring peeper			
Hyla squirella Squirrel tree frog			
Hyla versicolor & *H. chrysocelis* Gray tree frog			
Pseudacris triseriata Upland chorus frog			
Gastrophryne carolinensis Eastern narrow-mouthed toad			

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
REPTILES			
Terrapene carolina Three-toed box turtle	omnivorous in captivity (Carr 1952)		
Terrapene ornata Ornate box turtle	insects and other small animals (Carr 1952)		
Anolis carolinensis Green anole	insects, spiders (Smith 1946)		
Sceloporus undulatus Fence lizard	mostly insects (Smith 1946)		
Chemidophorus sexlineatus Six-lined racerunner	mostly insects; some other arthropods, snails (Smith 1946)		
Eumeces fasciatus Five-lined skink	earthworms, spiders, insects, some young lizards and mice (Smith 1946)		
Eumeces laticeps Broad-headed skink	insects (Smith 1946)		
Leiolopisma laterale Ground skink	small insects, spiders, millipedes, pillbugs, sowbugs (Smith 1946)		
Ophisaurus attenuatus Slender glass lizard	insects, spiders, other arthropods, snails (Smith 1946)		
Coluber constrictor Racer	insects, frogs, snakes, young birds (Wright and Wright 1957)	Breeds: May Hatch: Jul.-Sept. (Wright and Wright 1957)	
Elaphe guttata Corn snake			
Elaphe obsoleta Texas rat snake	mice, lizards, birds and their eggs, tree frogs (Wright and Wright 1957)		

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Heterodon platyrhinos Eastern hognose snake	worms, insects, fish, amphibians, reptiles, birds, mammals (Wright and Wright 1957)		
Lampropeltis calligaster Prairie kingsnake	fish, amphibians, reptiles, small mammals (Wright and Wright 1957)		
Lampropeltis doliata Louisiana milk snake	lizards, small snakes (Wright and Wright 1957)		
Lampropeltis getulus Speckled king snake	other snakes, small birds, lizards, mice, rats (Wright and Wright 1957)		
Opheodrys aestivus Rough green snake	insects, spiders, snails, frogs, fish (Wright and Wright 1957)		
Diadophis punctatus Ringneck snake	insects, earthworms, toads, frogs, salamanders, snakes, lizards (Wright and Wright 1957)		
Storeria dekayi Brown snake	earthworms, snails, insects, small frogs, fish (Wright and Wright 1957)		
Thamnophis sirtalis Garter snake	earthworms, mollusks, insects, fish, salamanders, toads, frogs, small mammals, small birds (Wright and Wright 1957)		
Virginia striatula Rough earth snake	earthworms, mollusks, insects, sowbugs, small anurans, small lizards (Wright and Wright 1957)		
Micrurus fulvius Eastern coral snake	lizards, small snakes (Wright and Wright 1957)		
Agkistrodon contortrix Southern copperhead	frogs, small rodents, small birds (Wright and Wright 1957)		
Crotalus horridus Canebrake rattlesnake	toads, mice, insects, small snakes, birds (Wright and Wright 1957)		
Sistrurus miliarius Pygmy rattlesnake	mice, insects (Wright and Wright 1957)		

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
BIRDS			
Cathartes aura Turkey vulture	carrion (Bent 1937)	Year-round (Lowery 1974a)	
Coragyps atratus Black vulture	chiefly carrion, also young herons in rookeries (Bent 1937)	Year-round (Lowery 1974a)	
Ictinia mississippiensis Mississippi kite	mostly insects, some small frogs, lizards, snakes (Lowery 1974a)	Apr.-Oct. (Lowery 1974a)	
Accipter striatus Sharp-shinned hawk	small birds, small mammals, lizards, frogs, insects (Bent 1937)	Sept.-Apr. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Accipter cooperi Cooper's hawk	teal, snipe, screech owl, quail, doves, hawks, flickers, passerines; rabbits, opossum, skunks, rodents, reptiles, frogs, insects (Bent 1937)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Buteo jamaicensis Red-tailed hawk	almost wholly small rodents (Lowery 1974a)	Oct.-Mar. (Lowery 1974a)	
Buteo lineatus Red-shouldered hawk	earthworms, snails, amphibians, reptiles, birds, mammals (Bent 1937)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Buteo platypterus Broad-winged hawk	earthworms, insects, crayfish, anurans, reptiles, birds, mammals (Bent 1937)	Apr.-Sept. (Lowery 1974a)	
Colinus virginianus Bobwhite	84% plant: seeds, fruit, leaves, buds, tubers; 16% animal: mollusks, crustaceans, spiders, insects, frogs (Bent 1932)	Year-round (Lowery 1974a)	
Tringa solitaria Solitary sandpiper			Drainage ditches (Lowery 1974a)
Philohela minor American woodcock	earthworms, grubs, slugs, insects and their larvae (Bent 1927)	Oct.-Feb. (Lowery 1974a)	
Zenaida macroura Mourning dove	seeds (Bent 1932)	Year-round (Lowery 1974a)	
Coccyzus americanus Yellow-billed cuckoo	mostly caterpillars-also other insects, wild berries, frogs, lizards (Bent 1940)	Apr.-Oct. (Lowery 1974a)	

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Coccyzus erythophthalmus Black-billed cuckoo	similar to above; also small mollusks, fish, aquatic larvae, fruits and berries, bird eggs and young (Bent 1940)	Apr.-May; Aug.-Oct. (1974a)	
Tyto alba Barn owl	small mammals, birds, insects, frogs (Bent 1937)		"Blue List" Nat. Aud. Soc. (1976)
Otus asio Common screech owl	worms, arthropods, snails, fish, amphibians, reptiles, birds, mammals (Bent 1937)	Year-round; nesting in Mar.-Apr. (Lowery 1974a)	
Bubo virginianus Great horned owl	mostly mammals; also birds, reptiles, amphibians, fish, insects (Bent 1937)	Year-round; nesting in Dec.-Jan. (Lowery 1974a)	
Strix varia Barred owl	mammals, birds, reptiles, amphibians, fish, crayfish, insects, spiders (Bent 1937)	Year-round; nesting in Feb. (Lowery 1974a)	
Caprimulgus carolinensis Chuck-will's-widow	mostly insects; some small birds (Bent 1940)	Apr.-May; Aug.-Oct. (Lowery 1974a)	
Caprimulgus vociferus Whip-poor-will	entirely insects (Bent 1940)	Mar.-Apr. (Lowery 1974a)	
Chordeiles minor Common nighthawk	mostly flying insects (Bent 1940)	Apr.-Oct. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Chaetura pelagica Chimney swift	flying insects (Bent 1940)	Mar.-Oct. (Lowery 1974a)	
Colaptes auratus Common flicker	61% animal: ants and other insects 39% plant: fruits and berries (Bent 1949)	Year-round (Lowery 1974a)	
Dryocopus pileatus Pileated woodpecker	73% animal: ants, beetles; 27% plant: wild fruits and berries (Bent 1939)	Year-round (Lowery 1974a)	
Melanerpes carolinus Red-bellied woodpecker	26% animal: ants and other insects, spiders, frogs 74% plant: grain, nuts, fruits, berries (Bent 1939)	Year-round (Lowery 1974a)	
Melanerpes erythrocephalus Red-headed woodpecker	50% animal: insects, spiders, myriapods 47% plant: fruits, berries, nuts (Bent 1939)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Sphyrapicus varius Yellow-bellied sapsucker	cambium, bast, sap, wild fruits; ants, beetles, wasps, other insects (Bent 1939)	Sept.-Mar. (Lowery 1974a)	
Picoides villosus Hairy woodpecker	78% animal: insects, spiders, millipedes; 22% plant: fruit, berries, grain, cambium, mast (Bent 1939)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Picoides pubescens Downy woodpecker	76% animal: insects 24% plant: mostly wild fruit (Bent 1939)	Year-round (Lowery 1974a)	
Dendrocopos borealis Red-cockaded woodpecker	insects (larvae & adult), pine mast, wild fruit (Bent 1948)	Year-round (Lowery 1974a)	Endangered
Tyrannus tyrannus Eastern kingbird	mostly insects; also small fruits and berries (Bent 1942)	Mar.-Sept. (Lowery 1974a)	
Myiarchus crinitus Great crested flycatcher	94% animal: insects, spiders; 6% plant: small wild fruits and berries (Bent 1942)	Apr.-Sept. (Lowery 1974a)	
Empidonax flaviventris Yellow-bellied flycatcher	97% animal: insects, spiders; 3% plant: small fruits, some seeds (Bent 1942)	Aug.-Oct. (Lowery 1974a)	
Empidonax virescens Acadian flycatcher	97% animal: insects, spiders, millipedes; 3% plant: fruits and berries (Bent 1942)	Apr.-Oct. (Lowery 1974a)	
Empidonax traillii Willow flycatcher	96% animal: insects, spiders, millipedes; 4% plant: fruits, berries, seeds (Bent 1942)	Aug.-Sept. (Lowery 1974a)	
Empidonax alnorum Alder flycatcher		Aug.-Sept. (Lowery 1974a)	
Empidonax minimus Least flycatcher	98% animal: insects, spiders; 2% plant: fruits, berries, seeds (Bent 1942)	Sept.-Oct. (Lowery 1974a)	
Contopus virens Eastern wood pewee	99% animal: insects, spiders, millipedes; 1% plant: berries (Bent 1942)	Mar.-Oct. (Lowery 1974a)	
Nuttallornis borealis Olive-sided flycatcher	100% insects (Bent 1942)	Aug.-Sept. (Lowery 1974a)	
Cyanocitta cristata Blue jay	24% animal: insects, spiders, myriapods, small fish, amphibians, birds, mice; 76% plant: grain, berries, mast (Bent 1946)	Year-round (Lowery 1974a)	
Corvus brachyrhynchos Common crow	28% animal: insects, spiders, snails, crustaceans, amphibians, birds, mammals, carrion; 72% plant: grain, beans, fruit, berries (Bent 1946)	Year-round (Lowery 1974a)	

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Parus carolinensis Carolina chickadee	72% animal: insects, spiders; 28% plant: seeds, berries (Bent 1946)	Year-round (Lowery 1974a)	
Parus bicolor Tufted titmouse	67% animal: insects, snails; 33% plant: fruit, berries, mast (Bent 1946)	Year-round (Lowery 1974a)	
Sitla pusilla Brown-headed nuthatch	insects, pine seeds, spiders (Bent 1948)	Year-round (Lowery 1974a)	
Certhia familiaris Brown creeper	mostly insects, also spiders, pseudoscorpions (Bent 1948)	Oct.-Mar. (Lowery 1974a	
Troglodytes aedon Northern house wren	98% arthropods; 2% plant material (Bent 1948)	Sept.-Apr. (Lowery 1974a)	
Troglodytes troglodytes Winter wren	almost wholly insects and spiders (Bent 1948)	Oct.-Mar. (Lowery 1974a)	
Thryothorus ludovicianus Carolina wren	94% animal: insects, spiders, millipedes, sowbugs, snails, lizards, treefrogs, snakes; 6% plant: fruit (Bent 1948)	Year-round (Lowery 1974a)	
Dumetella carolinensis Gray catbird	44% animal: insects, spiders; 56% plant: fruit and berries (Bent 1948)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Toxostoma rufum Brown thrasher	63% animal: worms, snails, crayfish, insects, amphibians, lizards; 37% plant: fruits, berries (Bent 1948)	Year-round (Lowery 1974a)	
Turdus migratorius American robin	40% animal: worms, molluscs, insects 60% plant: berries and fruits (Bent 1949)	Oct.-Mar. (Lowery 1974a)	
Hylocichla mustelina Wood thrush	62% animal: insects, spiders, earthworms 38% plant: berries (Bent 1949)	Mar.-Oct. (Lowery 1974a)	
Catharus guttata Hermit thrush	wild fruits and berries (winter) (Bent 1949)	Oct.-Mar. (Lowery 1974a)	
Catharus ustulata Swainson's thrush	64% animal: insects, spiders, millipedes, snails, sowbugs, worms; 36% plant: fruits, berries, seeds (Bent 1949)	Apr.-May (Lowery 1974a)	
Catharus minimus Gray-cheeked thrush	75% animal: insects, spiders, other animals; 25% plant: fruits and berries (Bent 1949)	Apr.-May (Lowery 1974a)	

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Catharus fuscescens Veery	60% animal: insects, spiders, sowbugs, snails; 40% plant: fruits and berries (Bent 1949)	Apr.-May (Lowery 1974a)	
Polioptila caerulea Blue-gray gnatcatcher	insects, spiders (Bent 1949)	Mar.-Oct. (Lowery 1974a)	
Regulus satrapa Golden-crowned kinglet	almost wholly insects (Bent 1949)	Oct.-Mar. (Lowery 1974a)	
Regulus calendula Ruby-crowned kinglet	94% animal: insects, spiders, pseudoscorpions; 6% plant: fruit, berries, weed seeds (Bent 1949)	Oct.-Apr. (Lowery 1974a)	
Bombycilla cedorum Cedar waxwing	berries (Lowery 1974a)	Nov.-Apr. (Lowery 1974a)	
Sturnus vulgaris European starling	57% animal: mostly insects, also worms, snails, spiders, millipedes, sowbugs, carrion; 43% plant: fruits, berries, grain, seeds (Bent 1950)	Year-round (Lowery 1974a)	Introduced
Vireo griseus White-eyed vireo	90% animal: insects, spiders; 10% plant: berries and fruits (Bent 1950)	Mar.-Oct. (Lowery 1974a)	
Vireo flavifrons Yellow-throated vireo	98% animal: mostly insects, some spiders; 2% plant: wild fruits and berries (Bent 1950)	Mar.-Sept. (Lowery 1974a)	
Vireo solitarius Solitary vireo	(January) 24% plant: wild fruits and berries; 76% animal: mostly insects (Bent 1950)	Oct.-Apr. (Lowery 1974a)	
Vireo olivaceus Red-eyed vireo	86% animal: almost wholly insects; 14% plant: wild fruits and berries (Bent 1950)	Apr.-Oct. (Lowery 1974a)	
Vireo philadelphicus Philadelphia vireo	93% animal: mostly insects, some spiders; 7% plant: wild fruits and berries	Aug.-Oct. (Lowery 1974a)	
Vireo gilvus Warbling vireo	mostly insects, some plant material (Bent 1950)	Apr.-Aug. (Lowery 1974a)	
Mniotilta varia Black-and-white warbler	almost entirely insects and spiders, trace of plant material (Bent 1953)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Vermivora chrysoptera Golden-winged warbler	insects, spiders (Bent 1953)	Apr.-May; Aug.-Sept. (Lowery 1974a)	

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Vermivora pinus Blue-winged warbler	insects, spiders (Bent 1953)	Apr.-May; Aug.-Sept. (Lowery 1974a)	
Vermivora peregrina Tennessee warbler	insects, spiders, snails, trace of plant material (Bent 1953)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Vermivora celata Orange-crowned warbler	berries, fruits, insects (winter) (Bent 1953)	Nov.-Apr. (Lowery 1974a)	
Vermivora ruficapilla Nashville warbler	mostly insects (Bent 1953)	Mar.-May; Aug.-Oct. (Lowery 1974a)	
Parula americana Northern parula warbler	insects, spiders (Bent 1953)	Mar.-Oct. (Lowery 1974a)	
Dendroica petechia Yellow warbler	almost wholly insects, also spiders, myriapods (Bent 1953)	Apr.-May; Jul.-Sept. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Dendroica pensylvanica Chestnut-sided warbler	almost wholly insects; some seeds and berries (Bent 1953)	Apr.-May (Lowery 1974a)	
Dendroica caerulea Cerulean warbler	insects (Bent 1953)	Apr.-May; Aug.-Sept. (Lowery 1974a)	
Dendroica dominica Yellow-throated warbler	insects, spiders (Bent 1953)	Mar.-Aug. (Lowery 1974a)	
Dendroica virens Black-throated green warbler	insects, spiders (Bent 1953)	Apr.-May; Sept.-Nov. (Lowery 1974a)	
Dendroica discolor Prairie warbler	100% insects, spiders (Bent 1953)	Mar.-Aug. (Lowery 1974a)	
Dendroica fusca Blackburnian warbler	mostly insects (Bent 1953)	Apr.-May (Lowery 1974a)	
Dendroica magnolia Magnolia warbler	almost wholly insects (Bent 1953)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Dendroica coronata Myrtle warbler	berries, seeds, insects (winter) (Bent 1953)		

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Dendroica palmarum Palm warbler	mostly insects; some seeds and berries (Bent 1953)	Oct.-Apr. (Lowery 1974a)	
Dendroica striata Blackpoll warbler	almost wholly insects; some seeds and berries (Bent 1953)	Apr.-May (Lowery 1974a)	
Dendroica castanea Bay-breasted warbler	almost wholly insects; some fruit (Bent 1953)	Apr.-May (Lowery 1974a)	
Setophaga ruticilla American redstart	mostly insects (Bent 1953)	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	
Seiurus aurocapillus Oven bird	earthworms, mollusks, myriapods, spiders, insects, seeds, small fruit (Bent 1953)	Mar.-May; Aug.-Oct. (Lowery 1974a)	
Seiurus noveboracensis Northern waterthrush	almost wholly animal: small worms, minnows, crustaceans, mollusks, insects; a few seeds (Bent 1953)	Aug.-Oct. (Lowery 1974a)	
Seiurus motacilla Louisiana waterthrush	small mollusks, small fish, insects, some seeds (Bent 1953)	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	
Limnothlypis swainsoni Swainson's warbler	insects, spiders (Bent 1953)	Mar.-Sept. (Lowery 1974a)	
Helmintheros vermivorus Worm-eating warbler	insects, spiders (Bent 1953)	Apr.-May; Jul.-Aug. (Lowery 1974a)	
Protonotaria citrea Prothonotary warbler	insects, spiders, small mollusks (Bent 1953)	Mar.-Sept. (Lowery 1974a)	
Geothlypis trichas Common yellowthroat	mostly insects, a few seeds (Bent 1953)	Mar.-Oct. (Lowery 1974a)	
Ceothlypis formosa Kentucky warbler	insects, spiders, some berries (Bent 1953)	Apr.-Sept. (Lowery 1974a)	
Geothlypis philadelphia Mourning warbler	beetles, spiders (Bent 1953)	Aug.-Oct. (Lowery 1974a)	
Wilsonia citrina Hooded warbler	insects (Bent 1953)	Mar.-Oct. (Lowery 1974a)	

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
MAMMALS			
Didelphis virginiana Virginia opossum	insects, birds, carrion, plant material (Lowery 1974b)	Breeds in Jan.-Feb. (Lowery 1974b)	
Blarina brevicauda Short-tailed shrew	animals, plants (Lowery 1974b)	Active year-round (Lowery 1974b)	
Scalopus aquaticus Eastern mole			
Myotis austroriparius Southeastern myotis	insects (Lowery 1974b)	Active year-round in warm weather; mating in spring (Lowery 1974b)	
Lasiurus borealis Red bat	insects (Lowery 1974b)	Active year-round in warm weather; young born May-June (Lowery 1974b)	
Lasiurus seminolus Seminole bat	insects (Lowery 1974b)	Active year-round in warm weather; young born in June (Lowery 1974b)	
Lasiurus cinereus Hoary bat	insects		
Dasypus novemcinctus Nine-banded armadillo	insects, plant material (Lowery 1974b)	Breeds in Jul.-Aug. (Lowery 1974b)	
Sylvilagus aquaticus Swamp rabbit	green plants	Active year-round; breeds Jan.-Sept. (Lowery 1974b)	0.38-0.39/acre (Murray 1970)
Sciurus carolinensis Gray squirrel	plant material (Lowery 1974b)	Active year-round; breeds Dec.-Feb.; May-Aug. (Lowery 1974b)	
Sciurus niger Fox squirrel	plant material, insects (Lowery 1974b)	Active year-round; breeds Jan., May-Jun. (Lowery 1974b)	
Glaucomys volans Southern flying squirrel	plant material, birds (Lowery 1974b)	Active year-round; births in spring and fall (Lowery 1974b)	
Reithrodontomys fulvescens Fulvous harvest mouse	weed seeds and green plant material (Lowery 1974b)	Active year-round (Lowery 1974b)	

continued

Appendix 6.3(42). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Wilsonia pusilla Wilson's warbler	insects; occasionally fruit (Bent 1953)	Sept.-Oct. (Lowery 1974a)	
Wilsonia canadensis Canada warbler	insects, spiders (Bent 1953)	Sept. (Lowery 1974a)	
Icterus spurius Orchard oriole	mostly insects, spiders; some berries, flowers (Bent 1958)	Mar.-Aug. (Lowery 1974a)	
Icterus galbula Baltimore oriole	1/3 caterpillars; also beetles, ants, parasitic wasps, bugs, grasshoppers, spiders, snails	Apr.-May; Aug.-Sept. (Lowery 1974a)	
Euphagus cyanocephalus Brewer's blackbird	32% animal: insects, spiders, sowbugs, snails, egg shells; 68% plant: berries, grain, weed seeds (Bent 1958)	Nov.-Mar. (Lowery 1974a)	
Piranga olivacea Scarlet tanager	88% animal: insects; 12% plant: berries (Bent 1958)	Apr.-May (Lowery 1974a)	
Piranga rubra Summer tanager	insects, spiders, fruits, berries (Bent 1958)	Apr.-Sept. (Lowery 1974a)	
Cardinalis cardinalis Northern cardinal	30% animal: almost wholly insects; also spiders, centipedes, snails, small bivalves; 70% plant: grain, seeds, wild fruits (Bent 1968)	Year-round (Lowery 1974a)	
Pheuticus ludovicianus Rose-breasted grosbeak	52% animal: mostly insects; 48% plant: wild fruits, seeds	Apr.-May (Lowery 1974a)	
Carpodacus purpureus Purple finch	mostly seeds (winter) (Bent 1968)	Nov.-Feb. (Lowery 1974a)	
Carduelis tristis American goldfinch	seeds, berries, some insects (Bent 1968)	Nov.-Apr. (Lowery 1974a)	
Junco hyemalis Slate-colored junco	seeds; some insects (Bent 1968)	Oct.-Feb. (Lowery 1974a)	
Spizella passerina Chipping sparrow	38% animal: mostly insects, some spiders; 62% plant: mostly grass seeds (Bent 1968)	Winter (Lowery 1974a)	
Zonotrichia albicollis White-throated sparrow	mostly weed seeds, small fruits, some insects (Bent 1968)	Sept.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(42). Concluded.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Peromyscus gossypinus Cotton mouse	plant material (Lowery 1974b)	Active year-round; breeding lowest in summer (Lowery 1974b)	
Neotoma floridana Eastern wood rat	plant material, snails, insects (Lowery 1974b)	Active year-round (Lowery 1974b)	
Urocyon cinereoargenteus Gray fox	rats, mice, insects, berries, fruit, corn, mast (Lowery 1974b)	Active year-round; breeds late winter (Lowery 1974b)	
Procyon lotor Northern raccoon	animals and plant material (Lowery 1974b)	Breeds Dec.-Jan. (Lowery 1974b)	
Lynx rufus Bobcat	rabbits, squirrels, small rodents, small birds,	Mates mid-winter, birth in early spring (Lowery 1974b)	
Odocoileus virginianus White-tailed deer			

Appendix 6.3(43). Representative vertebrates of the Pasture Habitat in the Chenier Plain.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
AMPHIBIANS			
Ambystoma texanum Small-mouthed salamander			
Eurycea quadridigitata Dwarf salamander			
Scaphiopus holbrooki Hurter's spadefoot toad			
Bufo valliceps Gulf coast toad			
Bufo woodhousei Woodhouse's toad			
Acris crepitans Northern cricket frog			
Hyla crucifer Spring peeper			
Hyla squirella Squirrel tree frog			
Rana catesbeiana Bullfrog			
Rana sphenocephala Southern leopard frog			
Gastrophryne carolinensis Eastern narrow-mouthed toad			

continued

Appendix 6.3(43). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
REPTILES			
Terrapene ornata Ornate box turtle	insects and other small animals (Carr 1952)		
Anolis carolinensis Green anole	insects, spiders (Smith 1946)		
Cnemidophorus sexlineatus Six-lined racerunner	mostly insects; some other arthropods, snails (Smith 1946)		
Leiolopisma laterale Ground skink	small insects, spiders, millipedes, pillbugs, sowbugs (Smith 1946)		
Ophisaurus attenuatus Slender glass lizard	insects, spiders, other arthropods, snails (Smith 1946)		
Coluber constrictor Racer	insects, frogs, snakes, young birds (Wright and Wright 1957)	Breeds: May Hatch: Jul.-Sept. (Wright and Wright 1957)	
Elaphe guttata Corn snake			
Heterodon platyrhinos Eastern hognose snake	worms, insects, fish, amphibians, reptiles, birds, mammals (Wright and Wright 1957)		
Lampropeltis calligaster Prairie kingsnake	small mammals, lizards, frogs, small fish, toads, smaller snakes (Wright and Wright 1957)		
Lampropeltis getulus Speckled king snake	other snakes, small birds, lizards, mice, rats (Wright and Wright 1957)		
Opheodrys aestivus Rough green snake	insects, spiders, snails, frogs, fish (Wright and Wright 1957)		
Storeria dekayi Brown snake	earthworms, snails, insects, small frogs, fish (Wright and Wright 1957)		

continued

Appendix 6.3(43). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Storeria occipitomaculata Northern red-bellied snake	insects, slugs, earthworms, myriapods, sowbugs (Wright and Wright 1957)		
Thamnophis proximus Western ribbon snake	insects, fish, frogs, salamanders, mice, toads (Wright and Wright 1957)		
Thamnophis sirtalis Garter snake	earthworms, mollusks, insects, fish, salamanders, toads, frogs, small mammals, small birds (Wright and Wright 1957)		
Virginia striatula Rough earth snake	earthworms, insects, sowbugs, mollusks, small anurans, young lizards (Wright and Wright 1957)		
Micrurus fulvius Eastern coral snake	lizards, small snakes (Wright and Wright 1957)		
Agkistrodon piscivorus Cottonmouth	fish, salamanders, frogs, reptiles, birds, mammals (Wright and Wright 1957)		
Sistrurus miliarius Pygmy rattlesnake	mice, insects (Wright and Wright 1957)		
BIRDS			
Bubulcus ibis Cattle egret	insects (Lowery 1974a)	Year-round (Lowery 1974a)	Invaded La. in 1955
Branta canadensis Canada goose	almost wholly plants: aquatic plants, marsh grasses, sedges; some mollusks, crustaceans (Bent 1925)	Oct.-Feb. (Lowery 1974a)	Introduced at Rockefeller Wildlife Refuge
Anser albifrons White-fronted goose	grain, tender shoots, occasional insects (Bent 1925)	Nov.-Mar. (Lowery 1974a)	
Chen caerulescens Snow goose	almost wholly plants: grain, roots and culms of grasses; some insects, mollusks (Bent 1923)	Oct.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(43). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Anthus spinoletta Water pipit		Nov.-Mar. (Lowery 1974a)	
Anthus spragueii Sprague's pipit	insects, seeds (Bent 1950)	Nov.-Feb. (Lowery 1974a)	
Lanius ludovicianus Loggerhead shrike	68% insects, 28% small vertebrates, 4% spiders (Bent 1950)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Sturnus vulgaris European starling	57% animal: mostly insects, also worms, snails, spiders, millipedes, sowbugs, carrion; 43% plant: fruits, berries, grain, seeds (Bent 1950)	Year-round (Lowery 1974a)	Introduced
Geothlypis trichas Common yellowthroat	mostly insects, spiders; a few seeds (Bent 1953)	Mar.-Oct. (Lowery 1974a)	
Passer domesticus House sparrow	68% animal; 32% plant (Bent 1958)	Year-round (Lowery 1974a)	Introduced
Dolichonyx oryzivorus Bobolink	57% animal: insects, spiders, myriapods; 43% plant: weed seeds, grain (Bent 1958)	May (Lowery 1974a)	
Sturnella magna Eastern meadowlark	74% animal: insects, spiders; 26% plant: grain, seeds (Bent 1958)	Year-round (Lowery 1974a)	
Agelaius phoeniceus Red-winged blackbird	73% plant: fruit, grain, weed seeds; 27% animal: mostly insects, some spiders and myriapods (Bent 1953)	Year-round (Lowery 1974a)	
Icterus spurius Orchard oriole	mostly insects, spiders; some berries, flowers (Bent 1958)	Mar.-Aug. (Lowery 1974a)	
Euphagus carolinus Rusty blackbird	53% animal: insects, spiders, myriapods, crustaceans, amphibians, snails, small fish; 47% plant: grain, seeds, fruit, mast (Bent 1958)	Nov.-Apr. (Lowery 1974a)	
Euphagus cyanocephalus Brewer's blackbird	32% animal: insects, spiders, sowbugs, snails, egg shells; 68% plant: berries, grain, weed seeds (Bent 1958)	Nov.-Mar. (Lowery 1974a)	
Quiscalus mexicanus Great-tailed grackle	insects, fish, worms, small lizards, tadpoles, eggs and young of other birds (Bent 1958)	Mar.-Aug. (Lowery 1974a)	

continued

Appendix 6.3(43). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Anas acuta Northern pintail	13% animal: mollusks, crustaceans, insects 87% plant: pondweed, sedges and grasses (60%); other (27%) (Bent 1923)	Oct.-Mar. (Lowery 1974a)	
Cathartes aura Turkey vulture	carrion (Bent 1937)		
Coragyps atratus Black vulture	chiefly carrion, also young herons in rookeries	Year-round (Lowery 1974a)	
Accipter striatus Sharp-shinned hawk	small birds, small mammals, frogs, lizards, insects (Bent 1937)	Sept.-Apr. (Lowery 1974a)	
Accipter cooperi Cooper's hawk	teal, snipe, screech owl, quail, doves, hawks, flickers, passerines; rabbits, opossum, skunks, rodents, reptiles, frogs, insects (Bent 1937)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Buteo jamaicensis Red-tailed hawk	almost wholly small rodents (Lowery 1974a)	Oct.-Mar. (Lowery 1974a)	
Buteo swainsoni Swainson's hawk	mostly small mammals and insects (Bent 1937)	Accidental (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Circus cyaneus Marsh hawk	small mammals, herons, ducks, coots, rails, shorebirds,	Sept.-Apr. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Caracara cheriway Audubon's caracara	mostly carrion; also worms, insects, crustaceans, fish amphibians, reptiles, small mammals (Bent 1937)	Year-round at Gum Cove, Cameron Par. (Lowery 1974a)	"Blue List"
Falco peregrinus Peregrine falcon	primarily birds; also mammals, insects (Bent 1937)	Sept.-May (Lowery 1974a)	Endangered
Falco columbarius Merlin	mostly birds: green-winged teal, shorebirds, small [illegible]kens, various songbirds; also insects, spiders, reptiles, mice, pocket gophers, squirrels, bats (Bent 1937)	Sept.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Falco sparverius American kestrel	insects, amphibians, reptiles, birds, mammals (Bent 1937)	Sept.-Apr. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)

continued

Appendix 6.3(43). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Tympanuchus cupido Attwater's prairie chicken			Last La. record - 1919 (Lowery 1974)
Colinus virginianus Bobwhite			0.06/acre (Murray 1970)
Francolinus francolinus Black francolin	62% animal: mollusks, insects, spiders; 38% plant: tubers, legume seeds, green leaves	Year-round (Lowery 1974a)	Introduced at Gum Cove, Cameron Par. (Lowery 1974a)
Porzana carolina Sora	small mollusks, insects, seeds (Bent 1926)	Sept.-May (Lowery 1974a)	
Recurvirostra americana American avocet	65% animal: insects. 35% plant: seeds of aquatic and marsh plants (Bent 1927)	Sept.-May (Lowery 1974a)	
Charadrius vociferus Killdeer	98% insects and other animal matter (e.g., snails, crabs, crayfish); 2% plant: weed and grass seeds (Bent 1929)	Sept.-May (Lowery 1974a)	
Pluvialis dominica American golden plover	almost entirely insects; also small mollusks and crustaceans; some grass seeds, seaweed (Bent 1929)	Mar.-May (Lowery 1974a)	
Limosa haemastica Hudsonian godwit	worms, mollusks, various insects, crustaceans, other small marine life	Apr.-Jun. (Lowery 1974a)	
Limosa fedoa Marbled godwit	insects, mollusks (Bent 1927)	Oct.-Nov. (Lowery 1974a)	
Numenius phaeopus Whimbrel	earthworms, sandworms, insects, mollusks, small crustaceans, some plant material	Apr.-May (Lowery 1974a)	
Numenius americanus Long-billed curlew	worms, crustaceans, snails, insects, toads (Bent 1929)	Mar.-May; Sept.-Nov. (Lowery 1974a)	
Bartramia longicauda Upland sandpiper	97% animal: mostly insects; 3% plant: seeds (Bent 1929)	Mar.-Apr. (Lowery 1974a)	
Tringa solitaria Solitary sandpiper	insects, spiders, worms, small crustaceans, small frogs	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	

Appendix 6.3(43). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Philohela minor American woodcock	earthworms, grubs, slugs, insects and their larvae (Bent 1927)	Oct.-Feb. (Lowery 1974a)	
Capella gallinago Common snipe	mostly earthworms, also other worms, insects, some seeds of marsh plants (Bent 1927)	Oct.-Apr. (Lowery 1974a)	
Limnodromus griseus Short-billed dowitcher	worms, insects, fish eggs, small mollusks, seeds and roots of aquatic plants (Bent 1927)	Mar.-May; Sept.-Nov. (Lowery 1974a)	
Calidris minutilla Least sandpiper	mostly insects; also small crustaceans, worms (Bent 1927)	Aug.-Apr. (Lowery 1974a)	
Calidris fuscicollis White-rumped sandpiper	78% animal: snails, marine worms 22% plant: seeds (Bent 1927)	Apr.-Jun. (Lowery 1974a)	
Calidris bairdii Baird's sandpiper	insects, amphipods, algae (Bent 1927)	Mar.-May; Jul.-Oct. (Lowery 1974a)	
Calidris melanotos Pectoral sandpiper	insects (66%); amphipods (22.3%); algae (10.5%); also other animals, seeds (Bent 1927)	Mar.-May; Aug.-Oct. (Lowery 1974a)	
Calidris alpina Dunlin	small mollusks, small crustaceans, insects, marine worms, occasionally seeds (Bent 1927)	Oct.-May (Lowery 1974a)	
Calidris hemantopus Stilt sandpiper	animal (70%): small worms, mollusks, insects plant (30%): seeds (Bent 1927)	Apr.-May (Lowery 1974a)	
Trygites subruficollis Buff-breasted sandpiper	99% animal: insects, spiders; 1% plant: seeds	Mar.-May; Jul.-Oct. (Lowery 1974a)	
Zenaida macroura Mourning dove	seeds (Bent 1932)	Year-round (Lowery 1974a)	0.39-0.80/acre (Murray 1970)
Columbina passerina Common ground dove	small seeds, berries, insects (Bent 1932)	Oct.-May (Lowery 1974a)	

continued

Appendix 6.3(43). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Crotophaga sulcirostris Groove-billed ani	mostly insects, also fruits and berries (Bent 1940)	Oct.-Apr. (Lowery 1974a)	
Tyto alba Barn owl	small mammals, birds, insects, frogs (Bent 1937)		"Blue List" Nat. Aud. Soc. (1976)
Athene cunicularia Burrowing owl	insects, small mammals, birds, lizards, snakes, amphibians, fish, myriapods, crayfish (Bent 1937)	Oct.-Mar. (Lowery 1974a)	
Asio flammeus Short-eared owl	mostly small mammals, also small birds, insects (Bent 1937)	Oct.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Chordeiles minor Common nighthawk	insects, mostly flying (Bent 1940)	Apr.-Oct. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Chaetura pelagica Chimney swift	flying insects (Bent 1940)	Mar.-Oct. (Lowery 1974a)	
Colaptes auratus Common flicker	61% animal: ants and other insects 39% plant: fruits and berries (Bent 1949)	Year-round (Lowery 1974a)	
Tyrannus tyrannus Eastern kingbird	mostly insects; also small fruits and berries (Bent 1942)	Mar.-Sept. (Lowery 1974a)	
Tyrannus verticalis Western kingbird	91% animal: insects; 9% plant: seeds (Bent 1942)	Mar.-May; Aug.-Nov. (Lowery 1974a)	
Muscivora forficata Scissor-tailed flycatcher	96% animal: insects; 4% plant: small fruits and berries, a few seeds (Bent 1942)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Pyrocephalus rubinus Vermilion flycatcher	insects (Bent 1942)	Sept.-Apr. (Lowery 1974a)	
Iridoprocne bicolor Tree swallow	81% animal: insects and spiders 21% plant: seeds and berries (Bent 1942)	Sept.-May (Lowery 1974a)	
Riparia riparia	insects (Bent 1942)	Apr.-May; Jul.-Oct. (Lowery 1974a)	

Appendix 6.3(43). Continued.

Species	Food	Abundance or Activity	Remarks
Hirundo rustica Barn swallow	99% animal: insects; some spiders and snails (Bent 1942)	Mar.-May; Aug.-Nov. (Lowery 1974a)	
Petrochelidon pyrrhonota Cliff swallow	99% animal: insects (Bent 1942)	Apr.-Jun. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Progne subis Purple martin	mostly insects, some spiders (Bent 1942)	Feb.-Aug.; nesting Apr.-Jun. (Lowery 1974a)	
Corvus brachyrhynchos Common crow	28% animal: insects, spiders, snails, crustaceans, amphibians, birds, mammals, carrion; 72% plant: grain, beans, fruit, berries (Bent 1946)	Year-round (Lowery 1974a)	
Troglodytes aedon Northern house wren	98% arthropods; 2% plant material (Bent 1948)	Sept.-Apr. (Lowery 1974a)	
Troglodytes troglodytes Winter wren	almost wholly insects and spiders (Bent 1948)	Oct.-Mar. (Lowery 1974a)	
Thryothorus ludovicanus Carolina wren	94% animal: insects, spiders, millipedes, sowbugs, snails, lizards, treefrogs, snakes; 6% plant: fruit, seeds, berries, mast (Bent 1948)	Year-round (Lowery 1974a)	
Cistothorus platensis Sedge wren	insects, spiders (Bent 1948)	Oct.-Mar. (Lowery 1974a)	
Mimus polyglottos Northern mockingbird	48% animal: insects, spiders, crayfish, sowbugs, snails, lizards, small snakes; 52% plant: fruits and berries (Bent 1948)	Year-round (Lowery 1974a)	
Dumetella carolinensis Gray catbird	44% animal: insects, spiders; 56% plant: fruit and berries (Bent 1948)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Turdus migratorius American robin	40% animal: worms, molluska, insects 60% plant: berries and fruits (Bent 1949)	Oct.-Mar. (Lowery 1974a)	
Sialia sialis Eastern bluebird	68% animal: insects, spiders, myriapods; 32% plant: largely wild fruit (winter) (Bent 1949)	Year-round (Lowery 1974a)	

continued

Appendix 6.3(43). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Quiscalus major Boat-tailed grackle	insects, tadpoles, frogs, small fish, spiders (Bent 1958)	Year-round (Lowery 1974a)	
Quiscalus quiscula Common grackle	30% animal: insects, spiders, myriapods, crayfish, earthworms, sowbugs, reptiles, snails, fish, amphibians, birds, mice; 70% plant: grain (esp. corn), fruit, weed seeds, acorns (Bent 1958)	Year-round (Lowery 1974a)	
Molothrus ater Brown-headed cowbird	22% animal: insects; 78% plant: grain, weed seeds (Bent 1958)	Year-round (Lowery 1974a)	
Cardinalis cardinalis Northern cardinal	30% animal: almost wholly insects; also spiders, centipedes, snails, small bivalves; 70% plant: grain, seeds, wild fruits (Bent 1968)	Year-round (Lowery 1974a)	
Passerina cyanea Indigo bunting	insects, seeds, fruits, berries (Bent 1968)	Apr.-Oct. (Lowery 1974a)	
Passerina ciris Painted bunting	21% animal: mostly insects; also spiders, snails; 79% seeds (Bent 1968)	Apr.-Oct. (Lowery 1974a)	
Spiza americana Dickcissel	70% animal: mostly insects; some spiders; 30% plant: weed seeds, grain (Bent 1968)	Apr.-Jul. (Lowery 1974a)	
Passerculus sandwichensis Savannah sparrow	92% plant: seeds; 8% animal: mostly insects (winter) (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Pooecetes gramineus Vesper sparrow	33% animal: mostly insects; 67% plant: seeds, grain (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Spizella passerina Chipping sparrow	38% animal: mostly insects; some spiders; 62% plant: mostly grass seeds (Bent 1968)	Winter (Lowery 1974a)	
Spizella pusilla Field sparrow	41% animal: mostly insects; some spiders; 59% plant: grass seeds (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Zonotrichia leucophrys White-crowned sparrow	mostly seeds, some fruits and berries (winter) (Bent 1968)	Oct.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(43). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Melospiza lincolnii Lincoln's sparrow	42% animal: mostly insects, some spiders and millipedes; 58% plant: seeds, some grain (Bent 1968)	Apr.-May (Lowery 1974a)	
Melospiza georgiana Swamp sparrow	55% insects; 45% weed seeds (Bent 1968)	Sept.-May (Lowery 1974a)	
Melospiza melodia Song sparrow	34% animal: insects; 66% plant: seeds, fruits, berries	Oct.-Apr. (Lowery 1974a)	
MAMMALS			
Didelphis virginiana Virginia opossum	insects, birds, carrion, plant material (Lowery 1974b)	Breeds in Jan.-Feb. (Lowery 1974b)	
Cryptotis parva Least shrew	animals	Breeds year-round (Lowery 1974b)	
Sylvilagus floridanus Eastern cottontail	insects, plant material (Lowery 1974b)	Breeds Jul.-Aug. (Lowery 1974b)	0.38-0.39/acre (Murray 1970)
Sylvilagus aquaticus Swamp rabbit	green plants	Active year-round; breeds Jan.-Sept. (Lowery 1974b)	0.38-0.39/acre (Murray 1970)
Geomys bursarius Plains pocket gopher	roots, tubers, other plant material	Active year-round; breeds Mar.-Apr.; births May-Dec. (Lowery 1974b)	
Oryzomys palustris Marsh rice rat	plant material, insects, crustaceans; bird eggs and young (Lowery 1974b)	Breeds Mar.-Oct. (Lowery 1974b)	
Reithrodontomys humulis Eastern harvest mouse	almost wholly weed seeds; also grain, green vegetation	Active year-round, most births in Mar. and Nov. (Lowery 1974b)	
Reithrodontomys fulvescens Fulvous harvest mouse	weed seeds and green plant material (Lowery 1974b)	Active year-round (Lowery 1974b)	

continued

Appendix 6.3(43). Concluded.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Sigmodon hispidus Hispid cotton rat	plant material; bird eggs and young, insects, crayfish (Lowery 1974b)	Active and breeding year-round (Lowery 1974b)	
Rattus norvegicus Norway rat	grain, garbage, other rats (Lowery 1974b)	Active and breeding year-round (Lowery 1974b)	Introduced
Mus musculus House mouse	omnivorous (Lowery 1974b)	Active and breeding year-round (Lowery 1974b)	Introduced
Canis rufus Red wolf	nutria, swamp rabbit, cottontail, rice rat, cotton rat, muskrat (Riley and McBride 1972)	Breeds Jan.-Feb. (Riley and McBride 1972)	Endangered
Urocyon cinereoargenteus Gray fox	rats, mice, rabbits, insects, songbirds, fruits and berries (Lowery 1974b)	Active year-round, breeds in late winter (Lowery 1974b)	
Vulpes fulva Red fox	small mammals (Lowery 1974b)	Active year round, breeds fall-winter (Lowery 1974b)	
Procyon lotor Northern raccoon	animal and plant material (Lowery 1974b)	Active year-round; mating Dec.-Jan. (Lowery 1974b)	
Spilogale putorius Spotted skunk	insects, crayfish, insects, amphibians, small rodents, carrion, fruits (Lowery 1974b)	Breeds in winter, births in early spring (Lowery 1974b)	
Mephitis mephitis Striped skunk	insects, crayfish, amphibians, small rodents, small amounts of plant material (Lowery 1974b)	Active year-round (Lowery 1974b)	
Odocoileus virginianus White-tailed deer	plant material (Lowery 1974b)	Breeds: Sept.-Mar. (Lowery 1974b)	

Appendix 6.3(44). Representative vertebrates of the Rice Field Habitat in the Chenier Plain.

AMPHIBIANS

Notophthalmus viridescens Central newt	
Amphiuma tridactylum Three-toed amphiuma	
Siren intermedia Lesser siren	
Eurycea quadridigitata Dwarf salamander	
Bufo valiceps Gulf coast toad	
Bufo woodhousei Woodhouse's toad	
Acris crepitans Northern cricket frog	
Hyla cinerea Green tree frog	insects (Wright and Wright 1949)
Hyla crucifer Spring peeper	
Hyla squirella Squirrel tree frog	
Pseudacris triseriata Upland chorus frog	
Rana catesbeiana Bullfrog	

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Rana clamitans Bronze frog			
Rana grylio Pig frog			
Rana sphenocephala Southern leopard frog			
Gastrophryne carolinensis Eastern narrow-mouthed toad			
REPTILES			
Kinosternon subrubrum Mississippi mud turtle	insects, small snails (Carr 1952)		
Chrysemys picta Southern painted turtle	juvenile: 13% plant, 85% animal adult: 88% plant, 10% animal (Carr 1952)		
Chrysemys scripta Red-eared turtle	juvenile: 30% plant, 70% animal (e.g., amphipods) adult: 89% plant, 11% animal (e.g., caryfish) (Carr 1952)		
Deirochelys reticularia Chicken turtle	tadpoles, crayfish, plant material (Carr 1952)		
Coluber constrictor Racer	insects, frogs, snakes, young birds (Wright and Wright 1957)	Breeds: May Hatch: Jul.-Sept. (Wright and Wright 1957)	
Elaphe guttata Corn snake			
Farancia abacura Mud snake	amphiumas, sirens, frogs (Wright and Wright 1957)		
Lampropeltis calligaster Prairie kingsnake	small mammals, lizards, frogs, small fish, toads, smaller snakes		

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Lampropeltis dolista Louisiana milk snake	lizards, small snakes (Wright and Wright 1957)		
Lampropeltis retulus Speckled king snake	other snakes, small birds, lizards, mice, rats (Wright and Wright 1957)		
Nerodia cyclopion Green water snake	Gambusia (77.6%); other fish (18.6%); tadpoles (3.5%)	Mar.-Oct. (Mushinsky and Hebrard unpublished manuscript)	
Nerodia erythrogaster Yellow-bellied water snake	fish (65.3%); frogs and toads (27.0%); tadpoles (7.5%) (Mushinsky and Hebrard 1976)	Apr.-Aug. (Mushinsky and Hebrard unpublished manuscript)	
Nerodia rhombifera Diamondback water snake	fish (92.7%); frogs and toads (1.0%); tadpoles (6.1%)	Mar.-Oct. (Mushinsky and Hebrard unpublished manuscript)	
Regina grahamii Graham's crayfish snake	crayfish (100%) (Mushinsky and Hebrard 1976)	Mar.-Sept. (Mushinsky and Hebrard unpublished manuscript)	
Regina rigida Glossy crayfish snake	Siren, fish, crayfish (Wright and Wright 1957)		
Diadophis punctatus Ringneck snake	insects, earthworms, toads, frogs, salamanders, snakes, lizards (Wright and Wright 1957)		
Storeria dekayi Brown snake	earthworms, snails, insects, small frogs, fish (Wright and Wright 1957)		
Storeria occipitomaculata Northern red-bellied snake	insects, slugs, earthworms, myriapods, sowbugs (Wright and Wright 1957)		
Thamnophis proximus Western ribbon snake	insects, fish, frogs, salamanders, mice, toads (Wright and Wright 1957)		
Thamnophis sirtalis Garter snake	earthworms, mollusks, insects, fish, salamanders, toads, frogs, small mammals, small birds (Wright and Wright 1957)		
Virginia striatula Rough earth snake	earthworms, insects, sowbugs, mollusks, small anurans, young lizards (Wright and Wright 1957)		
Agkistrodon piscivorus Cottonmouth	fish, salamanders, frogs, reptiles, birds, mammals (Wright and Wright 1957)		

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
BIRDS			
Ardea herodias Great blue heron	mostly fish; also crustaceans, insects, frogs, lizards, snakes, birds, small mammals (Bent 1926)	Year-round (Lowery 1974a)	
Butorides striatus Green heron	small fish, earthworms, insects, tadpoles, frogs, snakes, small mammals (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Florida caerulea Little blue heron	crayfish, small crabs, insects, fish, frogs, lizards (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Bubulcus ibis Cattle egret	insects (Lowery 1974a)	Year-round (Lowery 1974a)	Invaded La. in 1955
Casmerodius albus Great egret	small fish, snails, fiddlers, insects, frogs, lizards, small snakes, mice, some plant material (Bent 1926)	Mar.-Nov. (Lowery 1974a)	
Egretta thula Snowy egret	shrimp, small fish, fiddlers, snails, insects, crayfish, small lizards, small frogs, small snakes (Bent 1926)	Mar.-Oct. (Lowery 1974a)	
Hydranassa tricolor Louisiana heron	slugs, snails, crayfish, insects, small fish, lizards, frogs (Bent 1926)	Mar.-Nov. (Lowery 1974a)	
Nycticorax nycticorax Black-crowned night heron	mostly fish (alive or dead), worms, crustaceans, insects		"Blue List" Nat. Aud. Soc. (1976)
Nyctanassa violacea Yellow-crowned night heron	snails, crayfish, crabs, fish, small reptiles, small mammals and birds (Bent 1926)	Mar.-Sept. (Lowery 1974a)	
Ixobrychus exilis Least bittern	slugs, leeches, insects, small fish, tadpoles, small frogs, lizards, small mammals (Bent 1926)	Apr.-Sept. (Lowery 1974a)	
Botaurus lentiginosus American bittern	mollusks, crayfish, insects, small fish, frogs, lizards, small snakes, mice (Bent 1926)	Oct.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Mycteria americana Wood stork	fish, aquatic reptiles, insects (Bent 1926)	Jun.-Sept. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Plegadis falcinellus Glossy ibis	insects, crayfish, young snakes (Bent 1926)	Year-round (Lowery 1974a)	

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Plegadis chihi White-faced ibis	earthworms, crayfish, mollusks, crayfish, insects, small fish and frogs, newts, leeches (Bent 1926)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Eudocimus albus White ibis	mostly crayfish; also other crustaceans, slugs, snails,	Mar.-Sept. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Ajaia ajaja Roseate spoonbill	fish, shrimp, insects (Bent 1926)	Year-round (Lowery 1974a)	
Branta canadensis Canada goose	almost wholly plants: aquatic plants, marsh grasses, sedges; some mollusks, crustaceans (Bent 1925)	Oct.-Feb. (Lowery 1974a)	Introduced at Rockefeller Refuge
Anser albifrons White-fronted goose	grain, tender shoots, occasional insects (Bent 1925)	Nov.-Mar. (Lowery 1974a)	
Chen caerulescens Snow goose	almost wholly plants: grain, roots and culms of grasses; some insects, mollusks (Bent 1923)	Oct.-Apr. (Lowery 1974a)	
Dendrocygna bicolor Fulvous whistling-duck	mostly seeds of grasses and weeds; also grasses, grain (Bent 1923)	Apr.-Sept. (Lowery 1974a)	
Anas platyrhynchos Mallard	90% plant: sedges, grasses, smartweeds, pondweeds, duckweeds, tubers, mast; 10% animal: insects, crustaceans, mollusks, fish (Bent 1923)	Oct.-Mar. (Lowery 1974a)	
Anas rubripes Black duck	mast, grain, mollusks, crustaceans (Bent 1923)	Oct.-Mar. (Lowery 1974a)	
Anas fulvigula Mottled duck	40% animal: mollusks, insects, crayfish, small fish 60% plant: mostly grasses (plants and seeds) (Bent 1923)	Year-round (Lowery 1974a)	
Anas strepera Gadwall	principally plants (Bent 1953)	Oct.-Mar. (Lowery 1974a)	
Anas acuta Northern pintail	13% animal: mollusks, crustaceans, insects 87% plant: pondweed, sedges and grasses (60%); other (27%) (Bent 1923)	Oct.-Mar. (Lowery 1974a)	
Anas crecca Green-winged teal	10% animal: insects, mollusks, crustaceans	Oct.-Mar. (Lowery 1974a)	

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Anas discors Blue-winged teal	30% animal: worms, mollusks, insects, tadpoles 70% plant: sedges, pondweeds and grasses (43.6%); other (26.4%) (Bent 1923)	Feb.-Apr.; Sept.-Nov. (Lowery 1974a)	
Anas clypeata Northern shoveler	animal: worms, small mollusks, insects, shrimp, small fish, small frogs. plant: buds and young shoots of rushes and other aquatics; grasses (Bent 1923)	Oct.-Apr. (Lowery 1974a)	
Anas americana American widgeon	90% plant, 10% animal (from Sept.-Apr.) (Bent 1923)	Oct.-Apr. (Lowery 1974a)	
Cathartes aura Turkey vulture	carrion (Bent 1937)	Year-round (Lowery 1974a)	
Coragyps atratus Black vulture	chiefly carrion, also young herons in rookeries (Bent 1937)	Year-round (Lowery 1974a)	
Accipiter striatus Sharp-shinned hawk	small birds, small mammals, frogs, lizards, insects (Bent 1937)	Sept.-Apr. (Lowery 1974a)	
Accipiter cooperi Cooper's hawk	teal, snipe, screech owl, quail, doves, hawks, flickers, passerines; rabbits, opossum, skunks, rodents, reptiles, frogs, insects (Bent 1937)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Buteo jamaicensis Red-tailed hawk	almost wholly small rodents (Lowery 1974a)	Oct.-Mar. (Lowery 1974a)	
Buteo swainsoni Swainson's hawk	mostly small mammals and insects (Bent 1937)	Accidental (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Circus cyaneus Marsh hawk	small mammals, herons, ducks, coots, rails, shorebirds, songbirds	Sept.-Apr. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Caracara cheriway Audubon's caracara	mostly carrion; also worms, insects, crustaceans, fish, amphibians, reptiles, small mammals (Bent 1937)	Year-round at Gum Cove, Cameron Par. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Falco columbarius Merlin	mostly birds: green-winged teal, shorebirds, small chickens, various songbirds; also insects, spiders, reptiles, mice, pocket gophers, squirrels, bats (Bent 1937)	Sept.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Falco sparverius American kestrel	insects, amphibians, reptiles, birds, mammals (Bent 1937)	Sept.-Apr. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Colinus virginianus Bobwhite	84% plant: seeds, fruit, leaves, buds, tubers; 16% animal: mollusks, crustaceans, spiders, insects, frogs (Bent 1932)	Year-round (Lowery 1974a)	0.11-0.12/acre (Murray 1970)
Francolinus francolinus Black francolin	62% animal: mollusks, insects, spiders; 38% plant: tubers, legume seeds, green leaves	Year-round (Lowery 1974a)	Introduced at Gum Cove, Cameron Par (Lowery 1974)
Rallus elegans King rail	grass seeds, insects, slugs, leeches, tadpoles, crayfish (Bent 1926)	Year-round (Lowery 1974a)	
Rallus limicola Virginia rail	earthworms, crayfish, insects, snails, small fish, some grass seeds (Bent 1926)	Oct.-Apr. (Lowery 1974a)	
Porzana carolina Sora	small mollusks, insects, seeds (Bent 1926)	Sept.-May (Lowery 1974a)	
Coturnicops noveboracensis Yellow rail		Oct.-May (Lowery 1974a)	
Laterallus jamaicensis Black rail		Nov.-Apr. (Lowery 1974a)	
Porphyrula martinica Purple gallinule	rice, other seeds, worms, mollusks (Bent 1926)	Apr.-Sept. (Lowery 1974a)	
Gallinula chloropus Common gallinule	seeds, roots, soft parts of aquatic plants, snails, insects, worms (Bent 1926)	Apr.-Nov. (Lowery 1974a)	
Fulica americana American coot	leaves, fronds, seeds and roots of aquatic plants; wild celery, algae, worms, snails, insects, small fish, tadpoles (Bent 1926)	Sept.-Apr. (Lowery 1974a)	
Himantopus mexicanus Black-necked stilt	99% animal: mostly insects; also crayfish, snails, tiny fish. 1% plant: seeds of aquatic and marsh plants (Bent 1927)	Mar.-Oct. (Lowery 1974a)	

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Recurvirostra americana American avocet	65% animal: insects. 35% plant: seeds of aquatic and marsh plants (Bent 1927)	Sept.-May (Lowery 1974a)	
Charadrius vociferus Killdeer	98% insects and other animal matter (e.g., snails, crabs, crayfish); 2% plant: weed and grass seeds (Bent 1929)	Sept.-May (Lowery 1974a)	
Pluvialis dominica American golden plover	almost entirely insects; also small mollusks and crustaceans; some grass seeds, seaweed (Bent 1929)	Mar.-May (Lowery 1974a)	
Pluvialis squatarola Black-bellied plover	marine worms, small mollusks, crustaceans, insects, some plant material (Bent 1929)	Sept.-May (Lowery 1974a)	
Limosa haemastica Hudsonian godwit	worms, mollusks, various insects, crustaceans, other Small marine life	Apr.-Jun. (Lowery 1974a)	
Limosa fedoa Marbled godwit	insects; mollusks (Bent 1927)	Oct.-Nov. (Lowery 1974a)	
Numenius americanus Long-billed curlew	worms, crustaceans, snails, insects, toads (Bent 1929)	Mar.-May; Sept.-Nov. (Lowery 1974a)	
Bartramia longicauda Upland sandpiper	97% animal: mostly insects; 3% plant: seeds (Bent 1929)	Mar.-Apr. (Lowery 1974a)	
Tringa melanoleuca Greater yellowlegs	small fish, occasionally insects (Bent 1927)	Feb.-May; Aug.-Nov. (Lowery 1974a)	
Tringa flavipes Lesser yellowlegs	mostly insects; also small crustaceans, small fish, worms (Bent 1927)	Feb.-May; Aug.-Nov. (Lowery 1974a)	
Tringa solitaria Solitary sandpiper	insects, spiders, worms, small crustaceans, small frogs (Bent 1929)	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	
Actitis macularia Spotted sandpiper	insects, occasionally small fish	Mar.-Apr.; Aug.-Oct. (Lowery 1974a)	
Steganopus tricolor Wilson's phalarope	aquatic insects and their larvae; amphipods; seeds of aquatic plants (Bent 1927)	Apr.-May; Jul.-Sept. (Lowery 1974a)	

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Capella gallinago Common snipe	mostly earthworms, also other worms, insects, some seeds of marsh plants (Bent 1927)	Oct.-Apr. (Lowery 1974a)	
Limnodromus griseus Short-billed dowitcher	worms, insects, fish eggs, small mollusks, seeds and roots of aquatic plants (Bent 1927)	Mar.-May; Sept.-Nov. (Lowery 1974a)	
Limnodromus scolopaceus Long-billed dowitcher	insect larvae, some plant material (Bent 1927)	Oct.-May (Lowery 1974a)	
Calidris pusilla Semipalmated sandpiper	small mollusks, worms, insects, traces of plant material (Bent 1927)	Apr.-May; Sept.-Nov. (Lowery 1974a)	
Calidris mauri Western sandpiper	insects, marine worms, small snails (Bent 1927)	Aug.-May (Lowery 1974a)	
Calidris minutilla Least sandpiper	mostly insects; also small crustaceans, worms (Bent 1927)	Aug.-Apr. (Lowery 1974a)	
Calidris fuscicollis White-rumped sandpiper	78% animal: snails, marine worms 22% plant: seeds (Bent 1927)	Apr.-Jun. (Lowery 1974a)	
Calidris bairdii Baird's sandpiper	insects, amphipods, algae (Bent 1927)	Mar.-May; Jul.-Oct. (Lowery 1974a)	
Calidris melanotos Pectoral sandpiper	insects (66%); amphipods (22.3%); algae (10.5%); also other animals, seeds (Bent 1927)	Mar.-May; Aug.-Oct. (Lowery 1974a)	
Calidris alpina Dunlin	small mollusks, small crustaceans, insects, marine worms, occasionally seeds (Bent 1927)	Oct.-May (Lowery 1974a)	
Calidris hemantopus Stilt sandpiper	animal (70%): small worms, mollusks, insects plant (30%): seeds (Bent 1927)	Apr.-May (Lowery 1974a)	
Tryngites subruficollis Buff-breasted sandpiper	99% animal: insects, spiders; 1% plant: seeds	Mar.-May; Jul.-Oct. (Lowery 1974a)	
Larus delawarensis Ring-billed gull	refuse, insects (Bent 1921)	Oct.-Apr. (Lowery 1974a)	

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Columba livia Rock pigeon			
Zenaida macroura Mourning dove	seeds (Bent 1932)	Year-round (Lowery 1974a)	0.71-0.78/acre (Murray 1970)
Columbina passerina Common ground dove	small seeds, berries, insects (Bent 1932)	Oct.-May (Lowery 1974a)	
Tyto alba Barn owl	small mammals, birds, insects, frogs (Bent 1937)		"Blue List" Nat. Aud. Soc. (1976)
Asio flammeus Short-eared owl	mostly small mammals, also small birds, insects (Bent 1937)	Oct.-May (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Chordeiles minor Common nighthawk	insects, mostly flying (Bent 1940)	Apr.-Oct. (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Chaetura pelagica Chimney swift	flying insects (Bent 1940)	Mar.-Oct. (Lowery 1974a)	
Megaceryle alcyon Belted kingfisher	almost wholly fish; also insects, crustaceans, molluscs, amphibians, small reptiles, birds, mice, berries (Bent 1940)	Sept.-Apr. (Lowery 1974a)	
Colaptes auratus Common flicker	61% animal: ants and other insects 39% plant: fruits and berries (Bent 1949)	Year-round (Lowery 1974a)	
Tyrannus tyrannus Eastern kingbird	mostly insects; also small fruits and berries (Bent 1942)	Mar.-Sept. (Lowery 1974a)	
Tyrannus verticalis Western kingbird	91% animal: insects; 9% plant: seeds (Bent 1942)	Mar.-May; Aug.-Nov. (Lowery 1974a)	
Muscivora forficata Scissor-tailed flycatcher	96% animal: insects; 4% plant: small fruits and berries, a few seeds (Bent 1942)	Apr.-May; Sept.-Oct. (Lowery 1974a)	
Sayornis phoebe Eastern phoebe	89% animal: insects, arachnids, millipedes 11% plant: fruit, seeds (Bent 1942)	Oct.-May. (Lowery 1974a)	

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Iridoprocne bicolor Tree swallow	81% animal: insects and spiders 21% plant: seeds and berries (Bent 1942)	Sept.-May (Lowery 1974a)	
Riparia riparia Bank swallow	insects (Bent 1942)	Apr.-May; Jul.-Oct. (Lowery 1974a)	
Hirundo rustica Barn swallow	99% animal: insects; some spiders and snails (Bent 1942)	Mar.-May; Aug.-Nov. (Lowery 1974)	
Petrochelidon pyrrhonota Cliff swallow	99% animal: insects (Bent 1942)	Apr.-Jun. (Lowery 1974)	"Blue List" Nat. Aud. Soc. (1976)
Progne subis Purple martin	mostly insects, some spiders (Bent 1942)	Feb.-Aug.; nesting Apr.-Jun. (Lowery 1974)	
Corvus brachyrhynchos Common crow	28% animal: insects, spiders, snails, crustaceans, amphibians, birds, mammals, carrion; 72% plant: grain, beans, fruit, berries (Bent 1946)	Year-round (Lowery 1974a)	
Corvus ossifragus Fish crow	carrion, crustaceans, fish, bird eggs, insects; berries, tree fruits, seeds, some grain (Bent 1946)	Year-round (Lowery 1974a)	
Thryothorus ludovicianus Carolina wren	94% animal: insects, spiders, millipedes, sowbugs, snails, lizards, treefrogs, snakes; 6% plant: fruit, seeds, berries, mast (Bent 1948)	Year-round (Lowery 1974a)	
Cistothorus palustris Marsh wren	insects; especially Coleoptera and Diptera (Bent 1948)	Year-round (Lowery 1974a)	
Cistothorus platensis Sedge wren	insects, spiders (Bent 1948)	Oct.-Mar. (Lowery 1974a)	
Mimus polyglottos Northern mockingbird	48% animal: insects, spiders, crayfish, sowbugs, snails, lizards, small snakes; 52% plant: fruits and berries (Bent 1948)	Year-round (Lowery 1974a)	
Turdus migratorius American robin	40% animal: worms, molluska, insects 60% plant: berries and fruits (Bent 1949)	Oct.-Mar. (Lowery 1974a)	
Sialia sialis Eastern bluebird	68% animal: insects, spiders, myriapods; 32% plant: largely wild fruit (winter) (Bent 1949)	Year-round (Lowery 1974a)	

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Anthus spinoletta Water pipit		Nov.-Mar. (Lowery 1974a)	
Lanius ludovicianus Loggerhead shrike	68% insects, 28% small vertebrates, 4% spiders (Bent 1950)	Year-round (Lowery 1974a)	"Blue List" Nat. Aud. Soc. (1976)
Sturnus vulgaris European starling	57% animal: mostly insects, also worms, snails, spiders, millipedes, sowbugs, carrion; 43% plant: fruits, berries, grain, seeds (Bent 1950)	Year-round (Lowery 1974a)	Introduced
Geothlypis trichas Common yellowthroat	mostly insects, a few seeds (Bent 1953)	Mar.-Oct. (Lowery 1974a)	
Passer domesticus House sparrow	68% animal; 32% plant (Bent 1958)	Year-round (Lowery 1974a)	Introduced
Dolichonyx orizivorus Bobolink	57% animal: insects, spiders, myriapods; 43% plant: weed seeds, grain (Bent 1958)	May (Lowery 1974a)	
Sturnella magna Eastern meadowlark	74% animal: insects, spiders; 26% plant: grain, seeds (Bent 1958)	Year-round (Lowery 1974a)	
Sturnella neglecta Western meadowlark	70% animal: insects, spiders, sowbugs, snails; 30% plant: grain, weed seeds (Bent 1958)	Oct.-Apr. (Lowery 1974a)	
Agelaius phoeniceus Red-winged blackbird	73% plant: fruit, grain, weed seeds; 27% animal: mostly insects, some spiders and myriapods (Bent 1953)	Year-round (Lowery 1974a)	
Icterus spurius Orchard oriole	mostly insects, spiders; some berries, flowers (Bent 1958)	Mar.-Aug. (Lowery 1974a)	
Euphagus carolinus Rusty blackbird	53% animal: insects, spiders, myriapods, crustaceans, amphibians, snails, small fish; 47% plant: grain, seeds, fruit, mast (Bent 1958)	Nov.-Apr. (Lowery 1974a)	
Euphagus cyanocephalus Brewer's blackbird	32% animal: insects, spiders, sowbugs, snails, egg shells; 68% plant: berries, grain, weed seeds (Bent 1958)	Nov.-Mar. (Lowery 1974a)	
Quiscalus major Boat-tailed grackle	insects, tadpoles, frogs, small fish, spiders (Bent 1958)	Year-round (Lowery 1974a)	
Quiscalus quiscula Common grackle	30% animal: insects, spiders, myriapods, crayfish, earthworms, sowbugs, reptiles, snails, fish, amphibians, birds, mice; 70% plant: grain (esp. corn), fruit, weed seeds, acorns (Bent 1958)	Year-round (Lowery 1974a)	

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Molothrus ater Brown-headed cowbird	22% animal: insects; 78% plant: grain, weed seeds (Bent 1958)	Year-round (Lowery 1974a)	
Guiraca caerulea Blue grosbeak	68% animal: insects; 32% plant: grain, seeds, fruits (Bent 1968)	Jul.-Oct. (Lowery 1974a)	
Passerina cyanea Indigo bunting	insects, seeds, fruits, berries (Bent 1968)	Apr.-Oct. (Lowery 1974a)	
Spiza americana Dickcissel	70% animal: mostly insects; some spiders; 30% plant: weed seeds, grain (Bent 1968)	Apr.-Jul. (Lowery 1974a)	
Passerculus sandwichensis Savannah sparrow	8% animal: mostly insects; 92% plant: seeds (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Poocetes gramineus Vesper sparrow	33% animal: mostly insects; 67% plant: seeds, grain (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Spizella passerina Chipping sparrow	38% animal: mostly insects, some spiders; 62% plant: mostly grass seeds (Bent 1968)	Winter (Lowery 1974a)	
Spizella pusilla Field sparrow	41% animal: mostly insects; some spiders; 59% plant: grass seeds (Bent 1968)	Oct.-Apr. (Lowery 1974a)	
Melospiza georgiana Swamp sparrow	55% insects; 45% weed seeds (Bent 1968)	Sept.-May (Lowery 1974a)	
MAMMALS			
Didelphis virginiana Virginia opossum	insects, birds, carrion, plant material (Lowery 1974b)	Breeds in Jan.-Feb. (Lowery 1974b)	
Cryptotis parva Least shrew	animals	Breeds year-round (Lowery 1974b)	
Myotis austroriparius Southeastern myotis	insects (Lowery 1974b)	Active year-round in warm weather; mating in spring (Lowery 1974b)	

continued

Appendix 6.3(44). Continued.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Lasiurus borealis Red bat	insects (Lowery 1974b)	Active year-round in warm weather; young born May-June (Lowery 1974b)	
Lasiurus seminolus Seminole bat	insects (Lowery 1974b)	Active year-round in warm weather; young born in June (Lowery 1974b)	
Lasiurus cinereus Hoary bat	insects		
Dasypus novemcinctus Nine-banded armadillo	insects, plant material (Lowery 1974b)	Breeds in Jul.-Aug. (Lowery 1974b)	
Sylvilagus floridanus Eastern cottontail	insects, plant material (Lowery 1974b)	Breeds Jul.-Aug. (Lowery 1974b)	0.38-0.39/acre (Murray 1970)
Sylvilagus aquaticus Swamp rabbit	green plants	Active year-round; breeds Jan.-Sept. (Lowery 1974b)	0.38-0.39/acre (Murray 1970)
Oryzomys palustris Marsh rice rat	plant material, insects, crustaceans, bird eggs and young (Lowery 1974b)	Breeds Mar.-Oct. (Lowery 1974b)	
Reithrodontomys humulis Eastern harvest mouse	almost wholly weed seeds; also grain, green vegetation (Lowery 1974b)	Active year-round, most births in Mar. and Nov. (Lowery 1974b)	
Reithrodontomys fulvescens Fulvous harvest mouse	weed seeds and green plant material (Lowery 1974b)	Active year-round (Lowery 1974b)	
Sigmodon hispidus Hispid cotton rat	plant material, bird eggs and young, insects, crayfish (Lowery 1974b)	Active and breeding year-round (Lowery 1974b)	
Ondatra zibethicus Common muskrat	plant material; aquatic animals (Lowery 1974b)	Breeding peaks in Nov. and Mar. (Lowery 1974b)	
Rattus norvegicus Norway rat	grain, garbage, other rats (Lowery 1974b)	Active and breeding year-round (Lowery 1974b)	Introduced
Mus musculus House mouse	omnivorous (Lowery 1974b)	Active and breeding year-round (Lowery 1974b)	Introduced

continued

Appendix 6.3(44). Concluded.

Species	Food	Seasonal Peaks of Abundance or Activity	Remarks
Myocastor coypus Nutria	aquatic plants (Lowery 1974b)		
Canis rufus Red wolf	nutria, swamp rabbit, cottontail, rice rat, cotton rat, muskrat (Riley and McBride 1972)	Breeds Jan.-Feb.; births Mar.-Apr. (Riley and McBride 1972)	
Vulpes fulva Red fox	small mammals (Lowery 1974b)	Active year-round, breeds fall-winter (Lowery 1974b)	
Procyon lotor Northern raccoon	animals and plant material (Lowery 1974b)	Breeds Dec.-Jan. (Lowery 1974b)	
Mustela vison North American mink	crayfish, rodents, birds, fish, crabs, frogs (Lowery 1974b)	Active year-round births in early spring (Lowery 1974b)	
Spilogale putorius Spotted skunk	insects, crayfish, insects, amphibians, small rodents, carrion, fruits (Lowery 1974b)	Breeds in winter, births in early spring (Lowery 1974b)	
Mephitis mephitis Striped skunk	insects, crayfish, amphibians, small rodents, small amounts of plant material (Lowery 1974b)	Active year-round (Lowery 1974b)	
Odocoileus virginianus White-tailed deer	plant material (Lowery 1974b)	Breeds: Sept.-Mar. (Lowery 1974b)	

Appendix 6.4 CHENIER PLAIN HYDROLOGICAL DATA AND HABITAT DATA.

Appendix 6.4(1). Method for calculating phosphorus loading rates of Chenier Plain Basins.

The general procedure was to divide the Chenier Plain into its natural drainage basins: Vermilion Basin, Mermentau/Chenier Basin, Calcasieu Basin, Sabine Basin, and the East Bay Basin. Each basin was then subdivided into two functional components: (1) open water receiving bodies such as Sabine Lake, Vermilion Bay, etc.; and (2) the drainage area, surrounding each water body from which the runoff water is derived. The following calculations were made: (1) total discharge into the water body; (2) the phosphorus concentration for each discharge area; and (3) development of the phosphorus input loading rate which determines the probability of a receiving water body to become eutrophic. Finally, the volume of the receiving water body, its flushing rate, and the salinity distribution was used to determine the sensitivity of the water body to eutrophication. Sensitivity was expressed by the following eutrophic states: permissible, borderline, or dangerous.

The system was found to be primarily controlled by agricultural runoff, which is the land use category which will require the attention of planners. Analysis of the phosphorus input loading rate shows the eutrophic state and the significance of each nutrient source. The calculations were subject to error because of the scarcity of data. Actual discharge data were available from upstream portions of the major rivers in the study area, but were generally not available where the streams discharged into the Chenier Plain. Therefore, measurement data were extrapolated to calculate annual discharge (m^3/yr). The phosphorus data were also spotty and were concentrated at point source discharges with little long-term data; readings at useful downstream locations were available for only a few dates per year. It was therefore necessary to classify the drainage area according to land use, and calculate the phosphorus input (g/yr) by using loading coefficients derived from the literature and modified by empirical investigations in other parts of coastal Louisiana (Craig and Day 1977).

The total phosphorus input was divided by the total discharge to obtain an annual average P concentration loading rate (g/m^3/yr) which was compared to a eutrophication state scale (Shannon and Brezonik 1971). The comparison allowed an evaluation of the water body on a scale of permissible, borderline, or dangerous.

Water Discharge Calculations

A complete survey of all discharge data source material was made for each basin. The locations and values were tabulated and the available data were evaluated. Generally, some data from measurement stations upstream from the basin were available, but few empirical measurements of drainage area-related discharge were available. Therefore, discharge was calculated

from run-off values, in acre-ft/mi^2, multiplied by the total drainage area for that particular bayou, river, or stream to obtain a total discharge (m^3/yr). Areas were obtained from Sloss's inventory of drainage areas (Sloss 1971). The data for each basin are listed in tables 6.4(1a) to 6.4(1d). They show the discharge area, the calculated run-off value, and the discharge in ft^3/sec and m^3/yr. For East Bay, because of lack of data, published run-off values were used with drainage areas to obtain a total discharge.

Phosphorus Discharge Calculations

Phosphorus (P) data were so scarce that P input according to land use was calculated. Sample calculations for point source input were made and in all five cases the P input calculated from land use was at least double that measured from known point source inputs. It was therefore accepted that the land use method represented worst case conditions.

Land use by basin was determined in acres from data published by the Louisiana State Planning Office (Louisiana State Planning Office 1975). The dated acreage of each land use category was multiplied by the appropriate phosphorus loading coefficient to obtain the phosphorus inputs. These were summed to produce a total basin annual P input in g/yr. This divided by the water discharge gave a total concentration in g/m^3/yr (Tables 6.4(2a) to 6.4(2e). This concentration was compared with a three level index of eutrophic state (Shannon and Brezonik 1971): permissible (P 0.12 g/m^3) meaning the amount of total P is permissible with no tendency towards eutrophication; borderline (0.12 g/m^3 < P < 0.22); and dangerous (P < 0.22 g/m^3) meaning the amount of total P is at a level that this receiving body is eutrophic.

Appendix 6.4(1a). Sabine Basin water discharge calculations.

Location	Area drained m^2	Average run off acre ft/mi^2	Discharge m^3/yr
Neches River	10,011	522	64.4×10^8
Taylor Bayou	530	600 (est.)	3.92×10^8
Sabine River	9,760	640	77.0×10^8
East Drainage (Johnson Bay)	643 (calc.)	550 (est.)	4.36×10^8
Total			149.68×10^8

Appendix 6.4(1b). Calcasieu Basin water discharge calculations.

Location	Area drained mi^2	Average run off acre ft/mi^2	Mean ft^3/sec	Discharge m^3/yr
Kinder	1,700	1,061 (calc.)	2,493	22.25×10^8
Oberlin	753	1,081 (calc.)	1,125	10.0×10^8
7346021	3,129 (Sloss)	1,070	4,624	41.2×10^8
GIWW at Lake	3,396	1,070	5,019.18	44.8×10^8
Calculated at Gulf of Mexico	376	1,070	555.72	4.96×10^8

Appendix 6.4(1c). Mermentau/Chenier Basin water discharge calculations

Location	Area drained mi^2	Average run off acre ft/mi^2	Discharge ft^3/sec	Discharge m^3/yr
GIWW and Mermentau	1,799.40			
Bayou Des Cannes Eunice 70150 USGS	131	1,392 (calc.)	252 1938-1970	
Bayou Nezpique (Basile) 70075 USGS	527	1,039 (calc.)	747	
Bayou Nezpique (Jennings) 70120 USGS				
Bayou Serpent 73100, 73200, 73150 USACE				
Mermentau River (Vermilion) 70375 USACE				
Mermentau River Lake Arthur 70525, 70530				
Bayou Wikoff (Rayne) 70525 COE				
Bayou Que de Tortue USGS 70440, 70450 USACE	158	4,270 on April 22		
Mermentau River Lacassine Ref. 70600 USACE				
Bayou Plaquemine Brule near Crowley 0220 USGS	252	1,565	545 (1942-1947)	
Lacassine near Lake Arthur USGS Gauge # 1 USACE	299			

continued

Appendix 6.4(1c). Concluded.

Location	Area drained mi^2	Average run off acre ft/mi^2	Discharge ft^3/sec	Discharge m^3/yr
Discharge from point 361	97	1,150	154	1.38×10^8
Mermentau River at GIWW	1,799			
Mermentau River at Bayou Quede Tortue	1,702	1,200 (est.)	2,821	25.2×10^8
Bayou Que de Tortue at Mermentau River	292	1,565 (calc.)	631	5.64×10^8
Lacassine at GIWW	398	1,100 (est.)	604	5.40×10^8
Mermentau River Basin above GIWW	2,780	940		32.22×10^8
Difference attributed to Lake Misere etc.	388	1,150 (est.)	616	5.51×10^8
Difference from GIWW to Catfish Point	721	1,150 (est.)	1,145	10.3×10^8
Difference from GIWW to Gulf	1,040	1,150 (est.)	1,652	14.8×10^8
Lacassine and Lake Misere Input		add 2 + 4m		10.91×10^8

Appendix 6.4(1d). Vermilion Basin water discharge calculations.

Location	Area drained mi^2	Average run off acre ft/mi^2	Discharge ft^3/sec	Discharge m^3/yr
Ruth Canal			84.1 mean (1976-1977)	1.15×10^8
Bayou Teche				
Vermilion River Perry 67830				
Vermilion River Abbeville 67675				
Coulee Kennys Abbeville 67750				
Vermilion River at Lafayette Surry Bridge 67373	288 at mouth of Coulee des Poches	1,573	626 mean (1976-1977)	
Bayou Teche Keystone Lock and Dam			457 mean 1976-1977 499 430 1959-1970	4.46×10^8
Bayou Fuselier			193	
Bayou Teche at Arnaudville	1,531	383.5	811 USGS	
Bayou Teche below Arnaudville			582	
Vermilion River at Long Bridge Rte. 94			175	
Vermilion River at Pinhook Bridge			665	

continued

Appendix 6.4(1d). Concluded.

Location	Area drained mi^2	Average run off acre ft/mi^2	Discharge ft^3/sec	Discharge m^3/yr
Vermilion River at Milton Bridge Rte. 921	406	1,497	840	
Teche at Arnaudville			780	
Vermilion River at GIWW	561	1,497 (calc.)		
Area from Avery Canal to Vermilion Basin Boundary including GIWW, Schooner Bayou, Six Mile Canal, etc.	300	1,300 (est.)		

Appendix 6.4(2a). Phosphorus input, discharge, and total P concentration for eutrophication sensitivity analysis, East Bay Basin.

Category	Drainage area (m^2 x 10^8	Phosphorus loading coefficients ($g/m^3/yr$)	Phosphorus input (gr/yr)	Comments
Cultural				
Urban	0.0115	0.11	0.0013 x 10^8	Includes point source
Industrial	0	0.01	0.0	
Agricultural				
Rice	0	0.25	0.0	
Non-rice	0.5481	0.53	0.2904 x 10^8	Pasture separated because it is major use
Pasture	1.3774	0.018	0.0247 x 10^8	
Natural				
Forest	0.0215	0.008	0.0002 x 10^8	
Lake	2.3388	0.044	0.1029 x 10^8	
Baron	0.7260	0.006	0.0044 x 10^8	
Wetland	2.1451	0.0	0.0	
Municipal waste	--	--	--	Insignificant
Industrial waste	--	--	--	Insignificant
Total	7.1684			
Total p (g/year) x 10^8			0.4239	
Total discharge (m^3/year) x 10^8				5.22
Total concentration (g/m^3/year)				0.0812

Eutrophic state: P = Permissible, P<0.12; B = Borderline, 0.12<P>0.22; D = Dangerous, P>0.22 — g/m^3/year — P

Appendix 6.4(2b). Phosphorus input, discharge, and total P concentration for eutrophication sensitivity analysis, Sabine Basin

Category	Drainage area ($m^2 \times 10^8$)	Phosphorus loading coefficients ($g/m^3/yr$)	Phosphorus input (gr/yr)	Comments
Cultural				
Urban	2.195	0.11	0.2414×10^8	Includes point source
Industrial	0.090	0.01	0.0009×10^8	Includes point source
Agricultural				
Rice	12.840	0.25	3.2087×10^8	
Non-rice	1.430	0.53	$.7560 \times 10^8$	
Natural				
Forest	48.044	0.008	0.3843×10^8	
Lake	7.097	0.044	0.3122×10^8	
Baron	0.179	0.006	0.0011×10^8	
Wetland	10.543	0.00	0.00	
Municipal waste	--	--	--	Included above
Industrial waste	--	--	--	Included above
Total	82.438			
Total p (g/year) $\times 10^8$			4.9046	
Total discharge (m^3/year) $\times 10^8$				149.58
Total concentration (g/m^3/year)				0.0328
Eutrophic state	P = Permissible B = Borderline D = Dangerous	P<0.12 0.12<P>0.22 P>0.22	g/m^3/year	P

Appendix 6.4(2c). Phosphorus input, discharge, and total P concentration for eutrophication sensitivity analysis, Calcasieu Basin

Category	Drainage Area (m^2 x 10^8)	Phosphorus Loading coefficients ($g/m^3/yr$)	Phosphorus Input (gr/yr)	Comments
Cultural				
Urban	2.800	0.11	0.3080×10^8	Includes point source
Industrial	0.252	0.01	0.0025×10^8	Includes point source
Agricultural				
Rice	28.617	0.25	7.1544×10^8	
Non-rice	7.607	0.53	4.0378×10^8	
Natural				
Forest	54.653	0.008	0.4372×10^8	
Lake	23.127	0.044	1.0176×10^8	
Baron	0.228	0.006	0.0014×10^8	
Wetland	19.949	0.0	0.0	
Municipal waste	--	--	--	Included above
Industrial waste	--	--	--	Included above
Total	137.233			
Total p (g/year) x 10^8			12.9589	
Total discharge (m^3/year) x 10^8				49.75
Total concentration (g/m^3/year)				0.26
Eutrophic state	P = Permissible B = Borderline D = Dangerous	P<0.12 0.12<P>0.22 P>0.22	g/m^3/year	D

Appendix 6.4(2d). Phosphorus input, discharge, and total P concentration for eutrophication sensitivity analysis, Mermentau/Chenier Basin

Category	Drainage area ($m^2 \times 10^8$)	Phosphorus loading coefficients ($g/m^3/yr$)	Phosphorus input (gr/yr)	Comments
Cultural				
Urban	1.9416	0.11	0.2136×10^8	Includes point source
Industrial	0.1179	0.01	0.0011×10^8	Includes point source
Agricultural				
Rice	29.4825	0.25	7.3706×10^8	
Non-rice	3.6429	0.53	1.9312×10^8	
Natural				
Forest	9.8395	0.008	0.0787×10^8	
Lake	25.5905	0.044	1.1259×10^8	
Baron	0.1144	0.006	0.0007×10^8	
Wetland	24.6569	0.0	0.0	
Municipal waste	--	--	--	Included above
Industrial waste	--	--	--	Included above
Total	95.3862			
Total p ($g/year$) $\times 10^8$			10.7218	
Total discharge ($m^3/year$) $\times 10^8$				53.42
Total concentration ($g/m^3/year$)				0.2007
Eutrophic state	P = Permissible B = Borderline D = Dangerous	P<0.12 0.12<P>0.22 P>0.22	$g/m^3/year$	B

Appendix 6.4(2e). Phosphorous input, discharge, and total P concentration for eutrophication sensitivity analysis, Vermilion Basin.

Category	Drainage area (m^2 x 10^8)	Phosphorus loading coefficients ($g/m^3/yr$)	Phosphorus input (gr/yr)	Comments
Cultural				
Urban	1.0821	0.11	0.1192 x 10^8	Includes point source
Industrial	0.0335	0.01	0.0003 x 10^8	Includes point source
Agricultural				
Rice	2.6042	0.25	0.6511 x 10^8	
Non-rice	4.8354	0.53	2.5623 x 10^8	
Natural				
Forest	1.3829	0.008	0.0111 x 10^8	
Lake	11.7732	0.044	0.5180 x 10^8	
Baron	0.0885	0.006	0.0005 x 10^8	
Wetland	6.7723	0.0	0.0	
Municipal waste	--	--	--	Included above
Industrial waste	--	--	--	Included above
Total	28.5721			
Total P (g/year) x 10^8			3.8625 x 10^8	
Total discharge (m^3/year) x 10^8				15.898
Total concentration (g/m^3/year)				0.24
Eutrophic state	P = Permissible B = Borderline D = Dangerous	P<0.12 0.12<P>0.22 P>0.22	g/m^3/year	D

Appendix 6.4(3). Techniques employed in habitat and canal inventory.

Habitats

The purpose of the inventory was to locate and determine the total areas occupied by each of the fourteen habitats. In addition, the inventory was to assess any temporal changes in the distribution and amount of the habitats and features.

Sources

The entire area is mapped by the U.S.G.S. at 1:24,000 scale. This represented the best resolution of published maps that were easily accessible. Where available the U.S.G.S. 1:24,000 orthophoto sheets were used. Approximately 60% of the area was covered by this set. For the remaining area the latest edition of U.S.G.S. 1:24,000 topographic maps were used as a base.

In mapping the present habitats in the 1:24,000 base the following remote sensing coverage was used:

1. 1969 U.S.A.C.E. uncontrolled photo mosaics.
2. 1974 U.S.G.S. orthophoto quadrangle sheets.
3. 1974 NASA High Altitude Color IR, missions 174, 191, 194, 197, and 289.

Differentiation between marsh types was based on Chabreck et al. (1968), Chabreck (1972), and the Texas Bureau of Economic Geology (1976). Updating those previous works was accomplished through low altitude overflights. The overflights along with ground reconnaissance served to evaluate the remote sensing interpretation.

Since field work was conducted in 1976 to 1977 and aerial coverage varied from 1969 to 1974, it is impossible to put an absolute date on the finalized habitat map. A reference date was needed in order to determine temporal changes in habitat distribution. Over 90% of the area was covered by a combination of color IR missions and the U.S.G.S. or the photo quads for the year 1974. Thus, except for the differentiation between marsh types the finalized habitat map represents habitats in 1974.

Areas

Areas of 1974 habitat units were derived from the 1:24,000 scale maps using the point-counting (grid sampling) method developed by Gagliano and van Beek (1970). This method was compared to digitizing areas by means of a Calma Digitizer (computerized planimeter) by Gane (in Adams et al. 1976)

for areas in southeast Louisiana and once again by participants of this project for selected areas in the Chenier Plain. A comparison of the two methods indicates that results were within 3% of each other for the area covered by one 1:24,000 U.S.G.S. topographic sheet.

Habitat Changes

Having established a habitat base map for the year 1974, a second habitat map representing some time in the past was sought in order to determine habitat changes through time. The availability of air photo coverage was the limiting factor in determining any habitat changes.

Examination of black and white aerial coverage revealed that 1952 was the earliest year in which sufficient coverage was available. This coverage, flown by the United States Navy, covered the entire Louisiana portion of the Chenier Plain and approximately 50% of the Texas portion. Habitat changes by basin, therefore, were measured from 1952 to 1974 with the exception of the East Bay area where changed were measured from 1954 to 1974.

In addition to the above coverage, 1953 to 1954 1:72,000 scale air photo mosaics and ~ 1:20,000 scale air photos mission flown by Edgar Tobin Aerial Services for the Humble Oil and Refining Company covering coastal Louisiana were used as a supplement. United States Navy air photos of the Texas coast flown in 1961 to 1962 was also used as supplemental coverage.

Variability in scale of the black and white air photos was significant. In mapping habitat changes, therefore, the areas of change were plotted on a scale of 1:24,000. These areas of change were then computed using the Calma Digitizer.

Shoreline Changes

Shoreline changes were represented in the habitat change matrices by either a change from Nearshore Gulf to Marsh (indicating shoreline advance) or from Marsh to Nearshore Gulf (shoreline retreat). While the shoreline may be advancing or retreating, it was not felt that the area of the beach changed significantly; rather the change was at the expense of the habitat either seaward or landward of the beach, depending on the direction of movement of the shoreline.

These changes were determined by use of unpublished data (Morgan, Louisiana State University) for the Louisiana coast and Seelig and Sorensen's (1973) data for the Texas coast. The former source included changes between 1954 and 1969. Thus, shoreline changes for the Louisiana portion of the Chenier Plain are in a close time frame with other habitat changes. The latter source, however, lists shoreline changes from the latter part of the nineteenth century to the early to mid 1960's. The data are reported as linear changes per year. The long time period covered gives one a misleading nature of the change, (i.e., most of the change could have occurred over a much shorter time period). As these were the only data available they were used by taking the reported linear change per year and multiplying by the time period covered for other habitat changes. For the East Bay area this was 22 years (1954 to 1974) and for the Texas portion of the Sabine Basin 24

years (1952 to 1974). The linear distances were converted to area by multiplying by the sum of half of the distance to the next data point to the west and to the east.

Canals

Canal length was digitized by type of canal. Area occupied by canals could not be digitized due to resolution problems in determining widths at 1:24,000 scale. An average width value for each type of canal was determined by general field observations, and a limited amount of U.S.A.C.E. dredge data. These width values, along with the digitized length values, were used in computing canal areas.

Canal types were defined according to their initial intended purpose. This was necessary in order to place a canal under a single category, although it may have multiple uses. For example, Stack's canals in and around the Sabine National Wildlife Refuge were constructed for trappers. This places these canals under second order navigation canals although the resulting spoil is also used for wildlife management impoundment. Definitions of the various canal types are listed below:

First Order Navigation Canals

- those major canals dredged and maintained to facilitate both interstate and intrastate navigation.

Second Order Navigation Canals

- canals dredged or dug to a low passage of small craft, or short deeper water spurs to allow movement of large craft from a first order canal to an industrial site.

Agricultural, Industrial, and Urban Drainage Canals (Wetland and Upland)

- canals whose primary purpose is to convey water to or from a site, or canals which were dug to isolate an impounded agricultural area.

Agricultural Access Canals and Borrow Pits

- canals and typically staggered borrow pits flanking an embankment which is used solely for the purpose of cattle access.

Oil Activity Canals

- canals dredged for exploration and production of oil and gas.

Canals dredged principally for a water-based oil/gas extractive operations were listed as oil field navigation canals. Canals and borrow pits flanking embankments which extended into the marsh to enable a land-based operation were classified as oil field embankment canals and borrow pits.

Appendix 6.4(3). Concluded

Transportation Embankments or Utility Canals and Borrow Pits

- dredged canals and borrow pits flanking either a raised, continuous artificial embankment constructed for movement across a wetland area or a canal flanking a powerline system across a wetland. Not all powerlines have canals associated with them; however, there are a number of canals of this type in the Sabine-Neches river valley.

Pipeline Canals

- all dredged and flooded pipeline routes. Very few open canals exist, and most of the lengths are actually pipelines which have once been backfilled but are now flooded due to erosion or compaction.

Wildlife Management Impoundment Canals

- canals dredged for navigation, drainage, or impoundment of areas specifically used in wildlife management programs, whether public or private.

Others

- canals and embankments not fitting into one of the above categories.

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Appendix 6.4(4). Habitat area (ha)[1] in 1974 by basin, in the Chenier Plain Region.

Habitat Type	VERMILION		CHENIER RIDGE		MERMENTAU		CALCASIEU		SABINE		EAST BAY	
	Area	%[2]	Area	%[2]	Area	%[2]	Area	%[2]	Area	%[2]	Area	%[2]
Nearshore Gulf	115,599	--	100,658	--	0	--	40,243	--	84,211	--	30,540	--
Inland Open Water	18,977	25.2	5,638	5.9	61,497	22.9	40,956	30.3	47,223	16.2	26,553	32.6
Salt Marsh	1,526	2.0	5,836	6.2	0	0	2,145	1.6	4,610	1.6	3,038	3.7
Brackish Marsh	13,603	18.1	14,222	15.0	0	0	26,330	19.4	38,443	13.2	8,247	10.1
Intermediate Marsh	14,797	19.6	8,184	8.6	5,519	2.1	20,412	15.1	29,788	10.2	6,143	7.5
Fresh Marsh	6,105	8.1	0	0	73,533	27.4	5,916	4.4	28,531	9.8	2,246	2.8
Impounded Marsh	7,962	10.6	48,834	51.5	49,399	18.4	9,751	7.2	41,212	14.1	4,623	5.7
Beach	396	0.5	1,544	1.6	0	0	844	0.6	2,124	0.7	1,256	1.5
Agriculture	2,056	2.7	671	0.7	36,366	13.6	7,268	5.4	10,171	3.5	3,766	4.6
Pasture	3,318	4.4	2,751	2.9	23,069	8.6	5,970	4.4	39,363	13.5	15,654	19.2
Ridge	2,655	3.5	6,708	7.1	12,634	4.7	11,370	8.4	19,391	6.6	7,003	8.6
Urban	199	0.3	401	0.4	1,595	0.6	2,277	1.7	19,088	6.5	2,577	3.2
Swamp Forest	464	0.6	0	0	1,660	0.6	715	0.5	3,699	1.3	0	0
Upland Forest	3,253	4.3	0	0	2,792	1.0	1,430	1.1	8,125	2.8	264	0.3
	190,910		195,447		268,064		175,627		375,979		111,910	

[1]1 hectare (ha) = 2.47 acres (a)

[2]Of inland area (excludes Nearshore Gulf).

Appendix 6.4(5). Net habitat changes 1952 to 1974[1] in Chenier Plain basins (ha)

Habitat type	VERMILION		CHENIER RIDGE		MERMENTAU		CALCASIEU		SABINE		EAST BAY	
	Area	%	Area	%	Area	%	Area	%	Area	%	Area	%
1. Nearshore Gulf	200	0.5	927	0.9	0	0	-161	-0.4	548	0.7	25	0.1
2. Inland Open Water	1,485	8.5	498	9.7	3,873	6.7	13,107	47.1	8,619	22.3	444	1.7
3. Natural Marsh[2]	-6,800	-15.9	-13,727	-32.6	-20,132	-20.3	-18,832	-25.6	-20,405	-16.8	-1,380	-6.6
4. Impounded Marsh	2,673	50.5	10,876	28.7	10,767	27.6	3,559	57.5	9,363	29.4	874	23.3
5a. Natural Ridge	-154	-12.7	-475	-12.6	-145	-3.5	-345	-4.1	-58	-0.6	-70	-1.5
5b. Spoil	1,099	222.5	1,441	72.8	1,000	13.1	848	34.4	937	11.2	40	1.8
6a. Rice	551	308.0	29	76.3	2,238	7.3	1,300	29.5	-945	-9.4	-386	-9.8
6b. Non-Rice Agric.	451	51.5	196	48.2	877	34.9	214	16.0	20	1.9	68	51.9
7. Pasture	676	25.6	120	4.6	1,893	8.9	-352	-5.6	-1,277	-3.1	121	0.8
8. Urban	87	77.7	152	61.0	52	3.4	1,428	168.0	3,449	22.1	278	12.1
9. Beach	0	0	-37	-2.3	0	0	-65	-7.1	0	0	-14	-1.1
10. Upland Forest	-177	-5.2	0	0	-289	-9.4	-530	-27.0	-251	-3.0	0	0
11. Swamp Forest	-91	-16.4	0	0	-134	-7.5	-171	-19.3	0	0	0	0

[1]For East Bay changes are from 1954 to 1974.

[2]No attempt was made to separate natural marsh types such as salt, brackish, intermediate, and fresh.

Appendix 6.4(6). Habitat changes (ha) matrix for the entire Chenier Plain, 1952 to 1974*

FROM \ TO	Open Water	Nearshore Gulf	Natural Marsh	Impounded Marsh	Natural Ridge	Spoil	Pasture	Rice	Urban	Upland Forest	Beach	Swamp Forest	Non-Rice Agriculture	TOTAL
Open Water			41	1,012		375			9					1,437
Nearshore Gulf			367											367
Natural Marsh	28,703	1,903		40,242		5,354	1,395	3,060	1,027					81,684
Impounded Marsh	106						243	2,527	206				60	3,142
Natural Ridge	9					21	480	510					227	1,247
Spoil	125						140		171					436
Pasture	204					16		4,889	2,501				1,062	8,672
Rice							6,788		390				836	8,014
Urban		3												3
Upland Forest	28					8	394	194	546				77	1,247
Beach	26					11			79					116
Swamp Forest	262					16	50	68						396
Non-Rice Agriculture							363	63	10					436
TOTAL	29,463	1,906	408	41,254	0	5,801	9,853	11,311	4,939	0	0	0	2,262	107,197

Area Lost

Area Gained

*For five of the six basins. For the East Bay Basin it covers the period 1954-1974. Reading the habitats on the left hand margin and moving across the table provides one with habitat loss statistics. Using the habitats listed across the top and reading down the columns provides statistics of habitat area gains.

Appendix 6.4(7a). Habitat changes (ha) matrix for East Bay Basin, 1954 to 1974.

From \ To	Open water	Nearshore Gulf	Natural marsh	Impounded marsh	Natural ridge	Spoil	Pasture	Rice	Urban	Upland forest	Beach	Swamp forest	Non-rice agric	Total
Open Water						25								25
Nearshore Gulf			43											43
Natural Marsh	426	65		874		58								1,423
Impounded Marsh														0
Natural Ridge									70					70
Spoil	43													43
Pasture								1,430	197				68	1,695
Rice							1,816							1,816
Urban		3												3
Upland Forest														0
Beach									14					14
Swamp Forest														0
Non-rice agric														0
Total	469	68	43	874	0	83	1,816	1,430	281	0	0	0	68	5,132

Appendix 6.4(7b). Habitat changes (ha) matrix for the Sabine Basin, 1952 to 1974.

FROM \ TO	Open water	Nearshore Gulf	Natural marsh	Impounded marsh	Natural ridge	Spoil	Pasture	Rice	Urban	Upland forest	Beach	Swamp forest	Non-rice agric	Total
Open Water						73			9					82
Nearshore Gulf			127											127
Natural Marsh	8,413	675		9,569		1,098	122	199	456					20,532
Impounded Marsh									206					206
Natural Ridge	9								29				20	58
Spoil	75								159					234
Pasture	204							1,495	1,962					3,661
Rice							2,262		377					2,639
Urban														0
Upland Forest									251					251
Beach														0
Swamp Forest														0
Non-rice agric														0
Total	8,701	675	127	9,569	0	1,171	2,384	1,694	3,449	0	0	0	20	27,790

Appendix 6.4(7c). Habitat changes (ha) matrix for Calcasieu Basin, 1952 to 1974.

FROM \ TO	Open water	Nearshore Gulf	Natural marsh	Impounded marsh	Natural ridge	Spoil	Pasture	Rice	Urban	Upland forest	Beach	Swamp forest	Non-rice agric	Total
Open Water				272		28								300
Nearshore Gulf			197											197
Natural Marsh	13,118	36		3,392		899	119	930	534					19,029
Impounded Marsh	106													106
Natural Ridge						21	21		262				41	345
Spoil							140							140
Pasture						16		448	262				199	925
Rice							106						34	140
Urban														0
Upland Forest	28					8	166	23	295				10	530
Beach									65					65
Swamp Forest	155					16								171
Non-rice agric							21	39	10					70
Total	13,407	36	197	3,665	0	988	573	1,440	1,428	0	0	0	284	22,018

Appendix 6.4(7d). Habitat changes (ha) matrix for the Mermentau Basin, 1952 to 1974.

FROM \ TO	Open water	Nearshore Gulf	Natural marsh	Impounded marsh	Natural ridge	Spoil	Pasture	Rice	Urban	Upland forest	Beach	Swamp forest	Non-rice agric	Total
Open Water														0
Nearshore Gulf														0
Natural Marsh	3,850			12,797		1,019	1,154	1,312						20,132
Impounded Marsh							243	1,727					60	2,030
Natural Ridge							102						43	145
Spoil	7								12					19
Pasture								1,369	27				426	1,822
Rice							1,844		13				576	2,433
Urban														0
Upland Forest							118	171						289
Beach														0
Swamp Forest	16						50	68						134
Non-rice agric							204	24						228
Total	3,873	0	0	12,797	0	1,019	3,715	4,671	52	0	0	0	1,105	27,232

Appendix 6.4(7e). Habitat changes (ha) matrix for Chenier Basin, 1952 to 1974.

FROM \ TO	Open water	Nearshore Gulf	Natural marsh	Impounded marsh	Natural ridge	Spoil	Pasture	Rice	Urban	Upland forest	Beach	Swamp forest	Non-rice agric	Total
Open Water			41	740		249								1,030
Nearshore Gulf														0
Natural Marsh	1,502	927		10,136		1,181			22					13,768
Impounded Marsh														0
Natural Ridge							321		99				55	475
Spoil														0
Pasture								67	31				204	302
Rice													38	38
Urban														0
Upland Forest														0
Beach	26					11								37
Swamp Forest														0
Non-rice agric							101							101
Total	1,528	927	41	10,876	0	1,441	422	67	152	0	0	0	297	15,751

Appendix 6.4(7f). Habitat changes (ha) matrix for the Vermilion Basin, 1952 to 1974.

FROM \ TO	Open water	Nearshore Gulf	Natural marsh	Impounded marsh	Natural ridge	Spoil	Pasture	Rice	Urban	Upland forest	Beach	Swamp forest	Non-rice agric	Total
Open Water														0
Nearshore Gulf														0
Natural Marsh	1,394	200		3,473		1,099		619	15					6,800
Impounded Marsh								800						800
Natural Ridge							36		50				68	154
Spoil														0
Pasture								80	22				165	267
Rice							760						188	948
Urban														0
Upland Forest							110						67	177
Beach														0
Swamp Forest	91													91
Non-rice agric							37							37
Total	1,485	200	0	3,473	0	1,099	943	1,499	87	0	0	0	488	9,274

APPENDIX 6.5 LITERATURE CITED

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